

**LOUDEN
MACHINERY
COMPANY**

Perfect Barn Equipments

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From the collection of:

Alan O'Bright

24144 35 -
Illustrated Catalogue No. 39.

Louden Machinery Company

Manufacturers

Perfect Barn Equipments



Hay Carriers, Hay Slings, Hay Forks, Pulleys, Hay
Carrier Track, Barn Door Hangers, Feed, Ensilage
and Litter Carriers, Cattle Stanchions, Etc.



Fairfield, Iowa, U. S. A.

Canadian Factory, Guelph, Ontario.

Copyrighted by Louden Machinery Company, 1907.



Louden Junior Steel Track Hay Carrier.

FOR OUR DOUBLE BEADED STEEL TRACK.

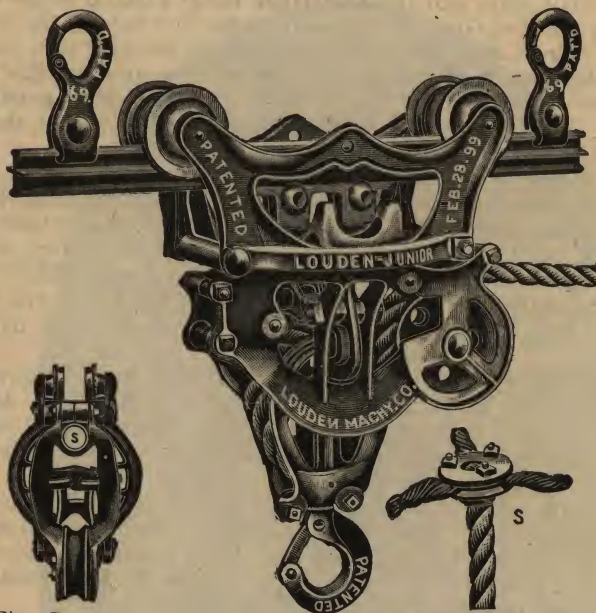


Fig. C 430.

Fig. 430. (Consul.)

THE STRONGEST SWIVEL CARRIER MADE.

The Louden Junior has the distinctive features of the Standard Louden Carrier, and in addition to these, it has a number of superior features of its own. It has a positive **never failing lock**, with a **square catch**, which can **never wedge fast**. It cannot be drawn past the stop without swiveling it quarter round. It has the same sheaves, bushings and track wheels as our Standard Carrier. (See W and B, Fig. 306, page 6).

The wheel arms are thoroughly braced and will **never spread** with a heavy load and let the carrier off the track.

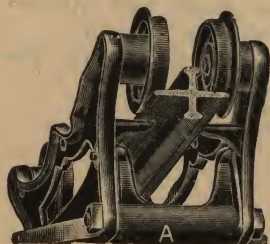


Fig. 7.

Fig. 7 is an end view of the upper frame of all the **Louden Swivel Carriers**, showing its great strength. The sides carrying the wheels are joined together by two end pieces A. These end pieces have upwardly extending arms (as seen in cut), which are secured to the sides above while a bolt holds them together at the bottom, thus making the strongest possible frame, and at the same time saving space, as all the space taken up below the track is the thickness of the end pieces A.



Louden Junior (Continued)

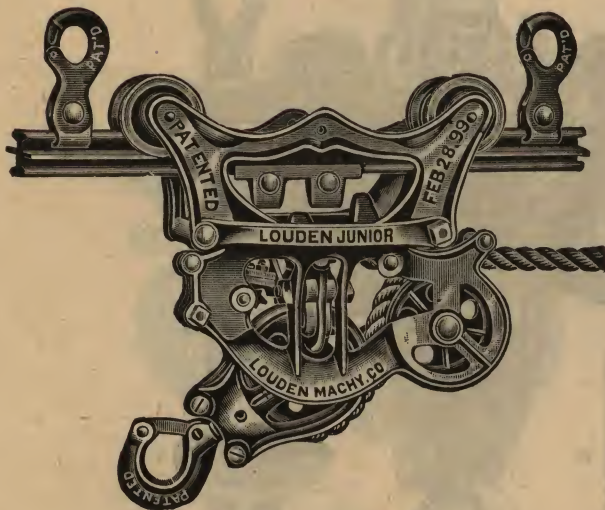


Fig. A 430. (Consul.)



Fig. B 430.

The end of the rope is fastened in the Carrier with our **patent swivel iron knot**, as shown in S, Fig. 430. The rope is placed through the tilting eye S, Fig. C 430, and the iron knot resting loosely thereon makes a complete, durable and simple swivel, which lets all kink and twist out of the rope. This is the only carrier on the market that has a successful rope swivel. This is a very valuable feature in any carrier.



Fig. 535.

It is built to run on our **Patent Double Beaded Steel Track**, but may be used with equal satisfaction on our **Single Beaded Steel Track**. To do this, drill holes in the flanges and fasten stop (see Fig. 535) to lower side of track with stove bolts.

Fig A 430 shows the Fork Pulley drawn to the side in carrying a load over a high beam or a nearly filled mow. Fig. B. 430 is an end view and Fig. C 430 (opposite page) is a bottom view. These cuts show the wide, flaring mouth and also the great strength and perfect symmetry of this Carrier. We furnish with this Carrier the Fork Pulley, one Track Stop, and two End Stops. (Fig. 523, page 8'. Weight, 25 lbs.



Louden Standard Steel Track Hay Carrier.

FOR OUR SINGLE BEADED STEEL TRACK.

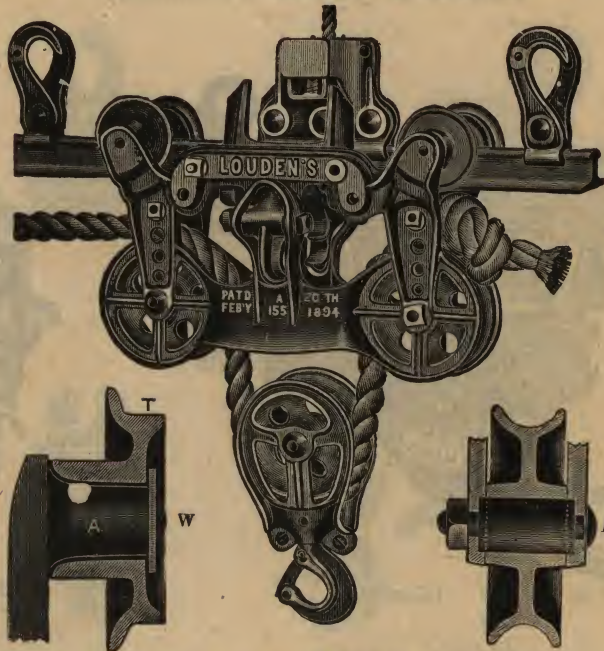


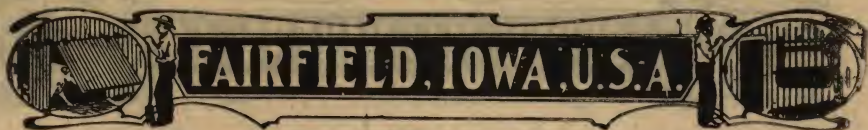
Fig. 306. (Captain.)

This is our original and leading Steel Track Carrier. It is simple, compact and durable. It carries the fork within **ten inches** of the track. The lock is positive and it holds the load easily and securely. It has no back-lash to make the carrier start with a jump and shake the hay loose.

The catch being square, it **cannot wedge** fast as some carriers do, but always trips easily. It cannot spread and slip off the track when heavily loaded. The rope wheels are large and are **protected by shields**, which make it easy on the rope. The bearings are chilled and run on large malleable bushings recessed into the sides and bolted through, which feature is patented. (See B, Fig. 306.)

Cut W, Fig. 306, represents Louden's Improved Track Wheel, having the web of the wheel directly under the tread T, which makes it strong and durable. It also shows the wheel axels, which are of solid malleable iron (more durable than steel) rounded out where it joins the carrier frame, so as to give it the greatest possible strength.

It has an **adjustable stop** which can be drawn up by a cord to let the Carrier pass without unlocking. Several of these stops may be used on the same track and all can be drawn up out of the way, except the one in use. It is reversible but can be rigged to run one way only, and when so rigged it will not pass the stop until the stop is lifted out of the way. It runs on our Single Beaded Steel Track.



The Swinging Fork Pulley.

Patented February 20, 1894.

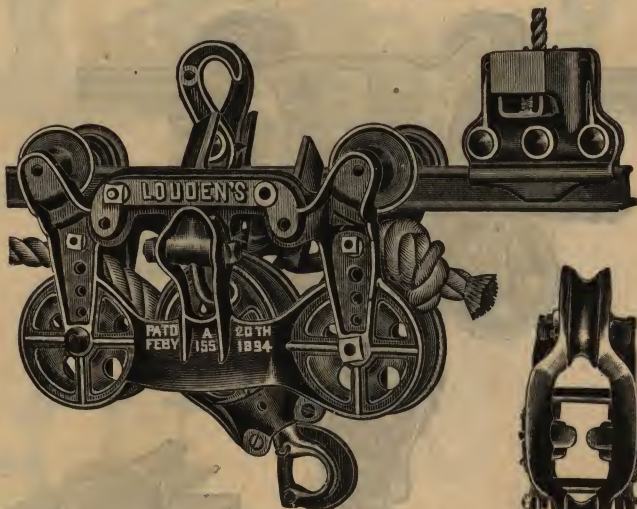


Fig. A 306. (Captain.)



Fig. B 306.

THE LOUDEN CARRIER is known everywhere by its "Wide Flaring Mouth and Round-Topped Fork Pulley which swings with the load when locked." These are the features which take the eye of the buyer, and many, not knowing the name, describe it in this way and refuse to take any other kind if they can get a "LOUDEN."

They know that in taking a large or long forkful of hay into a small door or over high beams, or in dragging it over the hay in a mow nearly full, a **rigid pulley** will cause the carrier to **tip and bind on the track** and is liable to bend or break the head of the pulley. **This difficulty is completely overcome in the Louden Carrier.** Kinky ropes do not bother, and it makes no difference at what angle the pulley enters the Carrier, **it always goes.** This feature alone is **worth the price of the Carrier** over that of any other in the market. All our Carriers have these valuable features.

The Fork Pulley, one adjustable stops and two end stops (Fig. 437, page 9) go with each Carrier. Weight, complete, 25 lbs.

Beware of infringements. We shall protect our rights under this patent, and will bring suit against any one infringing it.



Royal Steel Track Carrier.

FOR OUR DOUBLE BEADED STEEL TRACK.

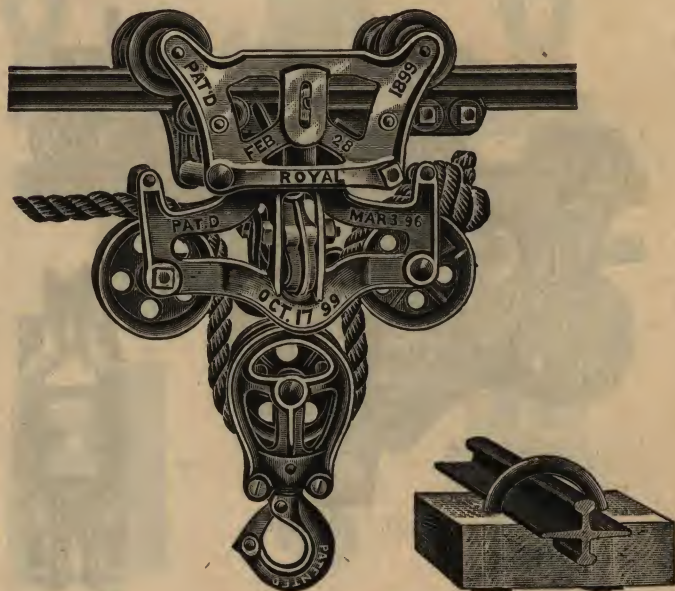


Fig. 489. (Charter.) Fig. 523. (Cage.)

The **Royal**, which is a companion for the **Jewel**, Fig. 488, opposite page, is one of our best working Carriers. It is a combination swivel and reversible. The bottom of the locking dog is circular and it will work, no matter how the lower part of the Carrier may be turned around. This Carrier, being short and compact, is well adapted to run on a circular track in round barns or on curved track with switches. It has the **Wide Flaring Mouth** and **Swinging Fork Pulley**. It is built to run on our Double Beaded Steel Track. Weight of Carrier complete with Fork Pulley and Track Stop, 24 lbs.

Fig. 523 is our Patent End Stop for Double Beaded Steel Track.

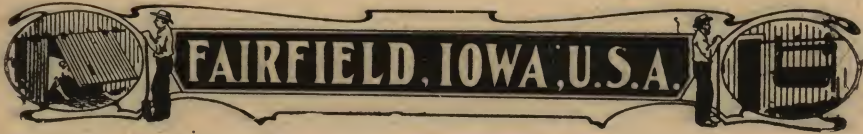
LOUDEN'S DOUBLE BEADED STEEL TRACK.



Fig. 571. (Clara.)

ate. Our Hay Carrier Tracks are made of the finest and best **High Carbon Steel**. They are the strongest Hay Carrier Tracks made and the easiest put in place.

Fig. 571 shows a section of our patent Double Beaded Steel Track on which the **Louden Junior**, Fig. 430, **Duplex**, Fig. 431, and **Royal**, Fig. 489, Fork Carriers, and the **Louden Junior**, Fig. 491, Sling Carriers, are built to operate.



Jewel Steel Track Carrier.

FOR OUR SINGLE BEADED STEEL TRACK.

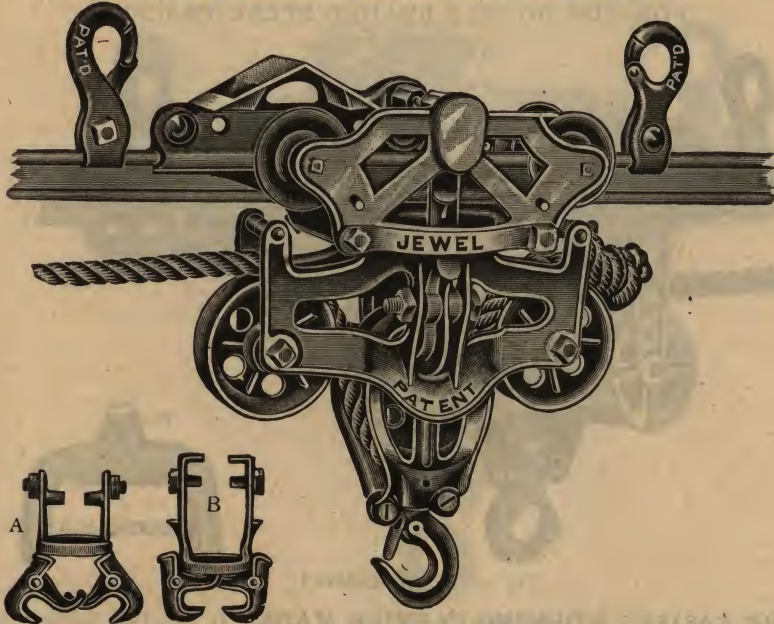


Fig. C 47.

Fig. 488. (Cargo.)

The Jewel, a companion for the Royal, Fig. 489, opposite page, is one of our latest and best Carriers. It is substantially the same as the Royal, with the exception that it is built to run on our Single Bead Track, and the Track Stop is placed on top of the track. It is a combination swivel and reversible. As will be seen in A and B, Fig. C 47, the locking dogs of both the Jewel and Royal are provided with rollers to run up and down in grooves in the carrier frame, which makes them work much easier than the old way of sliding in the grooves. Cut A, Fig. C 47, shows our **Interlocking Grappling Hooks** open ready to receive the Fork Pulley, and B, Fig. C 47, shows them in a closed position. (See Fig 5, page 13). Like all Louden Carriers, the Jewel has the wide flaring mouth and swinging fork pulley. Weight of Carrier complete with fork pulley and track stop, 24 lbs.

LOUDEN'S SINGLE BEADED STEEL TRACK.



Fig. 584. (Cora.)



Fig. 584 shows a section of our patent Single Beaded Steel

Track on which Fig. 437. (Caddy.) the Louden Standard, Fig. 306, the Victor, 429, and the Jewel, Fig. 488, Fork Carriers, and the Automatic Sling Carriers, Figs. 427 and 514, are built to operate. Fig. 437 is our patent End Stop for Single Beaded Steel Track.



Duplex Steel Track Carrier.

FOR OUR DOUBLE BEADED STEEL TRACK.

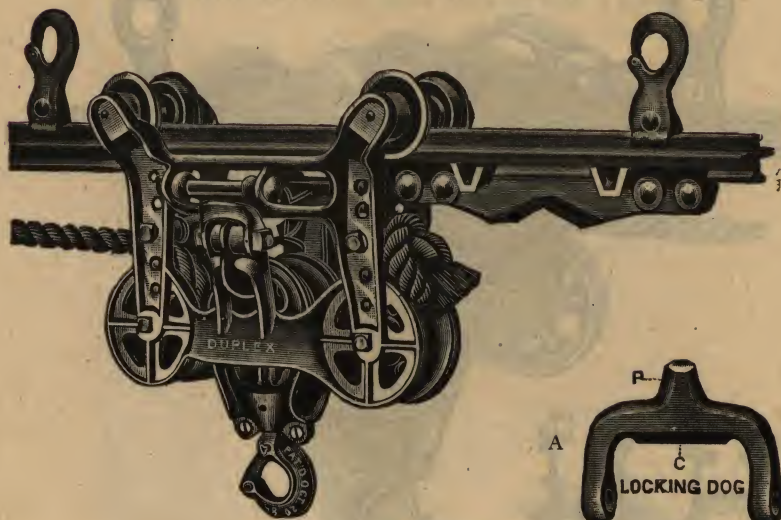


Fig. 431. (Candidate.)

THE EASIEST WORKING CARRIER MADE. It has two locking dogs, A, Fig. 431, which are hinged at their outer ends to the carrier sides so as to stand horizontally and at right angles to the track stop. It has two **interlocking grappling hooks** which engage the dogs at C, while the points P slide up in the inclines of the track stop and catch against its lugs.

This removes friction, and makes it decidedly the **easiest working lock** in the market. It also has the Wide Flaring Mouth and the Swinging Fork Pulley of other Louden Carriers. It is a companion to the Victor Carrier, and is like it with the exception it is built to run on our Double Beaded Steel Track. It is warranted in every respect. Weight complete with Fork Pulley and Track Stop, 24 lbs.

DOUBLE BEADED SPLICE CLAMP



Fig. 550. (Mohler.)

Fig. 550 is our **Splice Clamp** for our Double Beaded Steel Track. The Clamp is placed on the under side of the track and is held firmly in position by four bolts. This holds the flanges level at the joints and makes the track just as strong at the joint as at any other point.



Victor Steel Track Carrier.

FOR OUR SINGLE BEADED STEEL TRACK.



Fig. 429. (Cashier.)

The Victor is substantially the same as the Duplex, Fig. 431, and is a companion to it, but it is built to run on our Single Beaded Steel Track, and the stop is placed on the upper part of the track. The grappling hooks and locking dogs are extended up to engage the stop in this position. The load is held entirely independent of the rope. The lock is positive and simple and the Fork Pulley can not become released until the Carrier is returned to the Track Stop. The Victor, as well as the Jewel, Royal and Duplex, has no equal for lowering heavy loads, such as bound grain, into a mow, merchandise into a warehouse, sawdust into ice houses, etc. Weight of Carrier complete with track stop and fork pulley, 24 lbs.

SINGLE BEADED SPLICE CLAMP



Fig. 436. (Mulkins.)

Fig. 436 shows our Patent Splice Clamp for our Single Beaded Steel Track. The pins P pass through holes in the track and hold the ends securely together. The coupling also holds the lower flanges of the track true and level, where they join together, allowing the Carrier to pass over the joints smoothly.



Louden's Senior Steel Track Carrier.

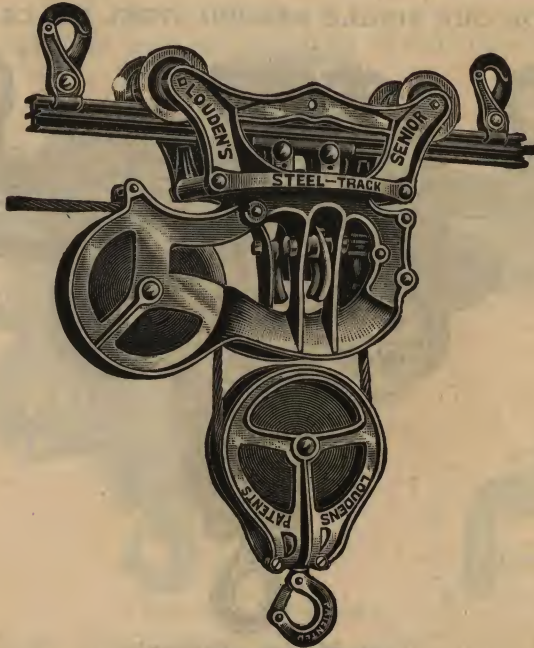


Fig. 661. (Gold.)

The Louden Senior Steel Track Carrier is the same as the Louden Junior Steel Track Carrier, Fig. 430, shown on pages 4 and 5, but it is built larger and heavier. It has 7 inch sheaves fitted for $\frac{3}{8}$ inch flexible wire draft rope instead of common rope. A flexible wire hoisting rope is much stronger than a common rope, and in many places it is much better. In some localities it is quite generally used. Where heavy work is required the Louden Senior Carrier with the flexible wire cable hoisting rope is the best carrier to use.

It is built to run on the Louden Senior Double Beaded Track, which is the same as our regular Standard Double Beaded Steel Track, except that it is made heavier and stronger and the wheel supporting flanges are $2\frac{1}{2}$ inches wide, while in the Standard Double Beaded Track the supporting flanges are but 2 inches wide.

However, the Carrier can be adjusted to run on our Standard Double Beaded Track and on most any other style of steel track 2 inches or $2\frac{1}{2}$ inches wide. We recommend the heavy Senior Track.

This Carrier is also built to operate on a 4x4 Wood Track.

OTHER HAY CARRIER TRACKS.



No. 3

No. 4

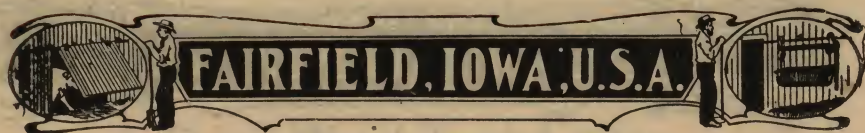
No. 5

No. 6

No. 7

No. 3 is two inches wide; Nos. 4 and 5, two and a half; No. 6, two and five-eighths; and No. 7, two and a quarter inches wide.

We do not furnish these tracks, but we fit our Junior Carrier to run on them. In ordering carrier state the number and size of your track.

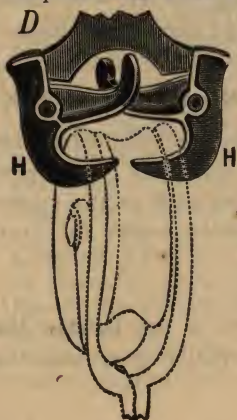


Louden's Wood Track Junior.



Fig. 441. (Capital.)

The **Louden Junior Wood Track Carrier** is the same as the **Louden Junior Steel Track Carrier** shown on pages 4 and 5, and is a companion for it, except that it is built to run on a 4x4 Wood Track. It has the positive never failing lock with a square catch which can never wedge fast. It cannot be drawn past the stop without swiveling the lower part of it quarter round. The wheel arms are thoroughly braced and will never spread with a heavy load and let the Carrier off the track. It also has the **Patent Swivel** to let all twists out of the rope. There is **no better Carrier** made for Wood Track than the **Louden Junior**. Weight complete with Fork Pulley and Track Stop, 27 lbs.



INTERLOCKING GRAPPLING HOOKS.

Fig. 5 represents Louden's Interlocking Grappling Hooks used in all Louden Fork Carriers in connection with "**Round Top Fork Pulley**," shown in dotted lines. These Interlocking Hooks, HH, are pivoted on opposite sides of the frame of the Carrier (not shown). These Hooks are so connected that they always act together either in or out.

The Hooks take a deep hold in the sides of the pulley frame and are securely held in connection therewith by the dog D dropping between their upper ends. The pulley is free to swing on the hooks, but the deep hold makes it impossible for the fork pulley to come out and drop the load.

Fig. 5.



Duplex Wood Track Carrier.

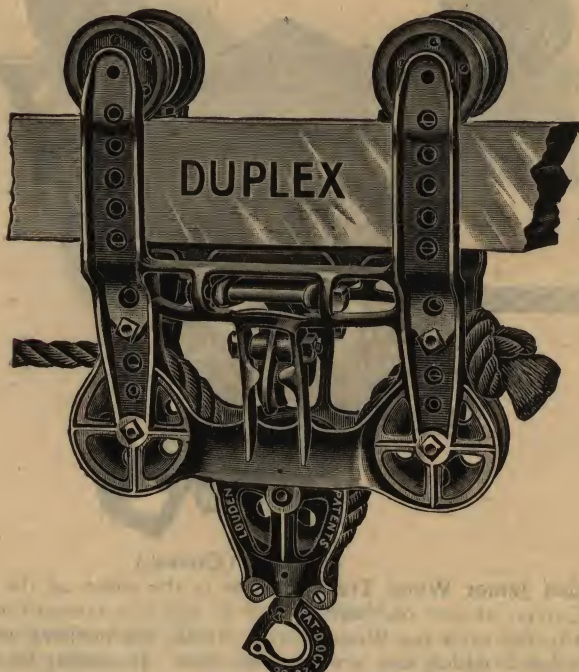


Fig. 443. (Captive.)

The Duplex Wood Track Carrier is the same as the Loudon Duplex Steel Track Carrier, Fig 431, page 10, and is a companion for it, only it is built to run on a 4x4 Wood Track. It is a strong, simple, easy working Carrier, with strong arms that do not spread under a heavy load and allow the carrier to come off the track. Weight complete with Fork Pulley and Track Stop, 26 lbs.

LOUDEN'S ANGLE TRACK PLATING FOR PLATING WOOD TRACKS.



Fig. 305. (Camile.)

It is put on with common 8-penny nails driven into the track at right angles to each other, and cannot come off. The angle also makes plating stiff at the corners where the weight comes. All wood tracks for heavy work should be plated.

Booklet of "Pointers showing the marked superiority of the Loudon Hay Carriers" sent on application. It contains valuable information regarding Hay Carriers and you should have it.



Royal Wood Track Carrier.



Fig. 490. (Cabin.)

The Royal Wood Track Carrier is the same as the Royal Steel Track Carrier, Fig. 489, page 8, and is a companion for it, except that it is built to run on a 4x4 Wood Track. The wheel arms are strong and well braced and do not spread under a heavy load and allow the Carrier to come off the track. Weight complete with Fork Pulley and Track Stop, 25 lbs.

LOUDEN'S EXTENSION SUPPORT.

Steel Track (Cover);
extra large (Cherry);
Wood Track (Climax);
extra large (China).

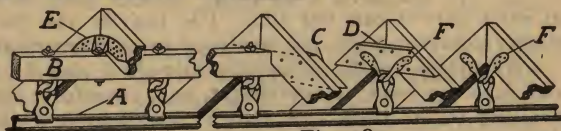


Fig. 380.

Fig. 380 shows our Patent Extension for which we furnish malleable iron supports E with two track hangers and two hook bolts, for either wood track or steel track, as ordered. For longer and heavier extensions we furnish three track hangers and three bolts.

This is the most substantial extension support that can be put into a barn after it is built. The wood piece B which extends back to second or third rafter in barn, as desired, is held securely in position to the end rafter by the iron E, and to the second and third rafters as shown in cut. Collar beams may be used on the rafters as shown at D to lower the rafter bracket to give the track the proper incline to run it the right distance under the wood extension piece B. Write for further information and directions.



Automatic Sling Carrier.

FOR OUR SINGLE BEADED STEEL TRACK

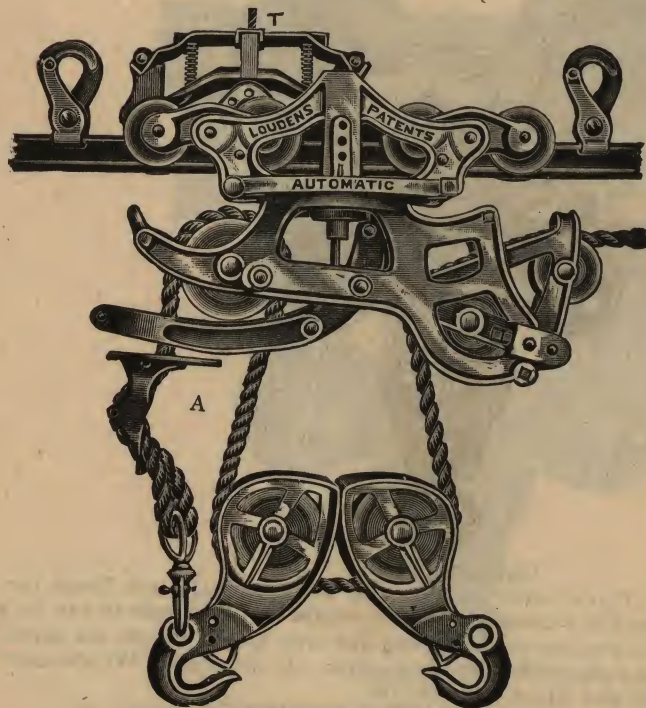


Fig 427. (Cannon.)

The Automatic Sling Carrier is built to run on our Single Beaded Steel Track. We make this Carrier with 4 wheels, also with our oscillating engine trucks, using eight wheels, as shown in cut. As Sling Carriers are required to do heavy work, we recommend the Carrier built with our engine trucks and eight wheels.

The lock in this Carrier is so smooth it can not injure the rope, and yet

so solid that it can not slip. The heavier the load, the tighter it holds. It is readily adjusted to fit any size rope or to compensate for wear.

By means of the adjustable trip A, it can be set to **automatically** run the load into the mow at **any height**, and, therefore, does not have to carry its load away up 'o the track and then let it fall back to the bottom of an empty mow. When so desired it will carry its load close up to the track and over high beams.

The stop is both **positive and adjustable**. The carrier can not be drawn past it, except by lifting the inclines or cam of the stop with the cord T which is passed over a comb pulley (not shown) and then down to the operator. As many stops as desired may be placed on the track to take up loads at different points, and then be drawn up out of the way when not in use.

The Carrier works from opposite sides of the stop by simply lifting the incline or cam of the stop to let it pass and then swiveling the lower half of the Carrier around. The swivel is **thoroughly braced and extra strong** (see Fig. 7, page 4), and the trucks will not spread and slip off the track under heavy loads. Weight complete with two sling pulleys, adjustable track stop, two end stops, one comb pulley and one rope hook, 51 lbs.



Same With Right Angle Pulleys.

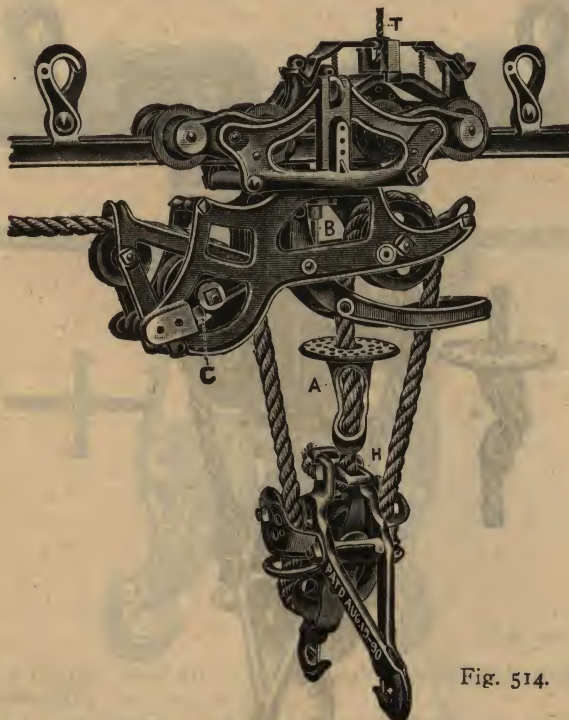


Fig. 514. (Cartridge.)

Fig. 514 shows the Automatic Carrier rigged with right angle pulleys, triple draft. By using a right angle pulley the hay is carried crosswise into the mow and is spread at right angles to the Hay Carrier Track as is shown in Fig. 412, page 38.

Fig. 427. shows the Automatic Carrier rigged with parallel pulleys, triple draft. With the parallel pulley the load of hay is carried into the barn lengthwise and when dropped into the mow it spreads out parallel with the Hay Carrier Track. This Carrier will work double draft and with either parallel or right angle pulleys. We recommend triple draft with slings.

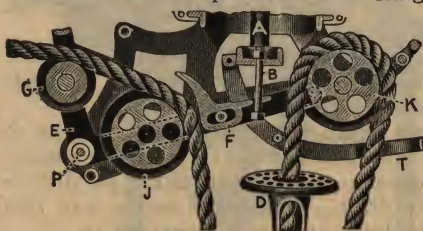


Fig. 528.

the load is being elevated by bolt B attached to locking dog A, which operates with the track stop.

Fig. 528 is a sectional view showing the locking mechanism and also how the carrier is threaded. Pulleys C and J are mounted on tilting frame E pivoted at P. The brake F is pivotally connected with the tilting frame, forming a knee joint, which grips the rope between the brake F and Pulley J when the carrier is tripped. Brake F is held free from the rope while



Louden Junior Sling Carrier. RIGGED WITH RIGHT ANGLE PULLEYS.

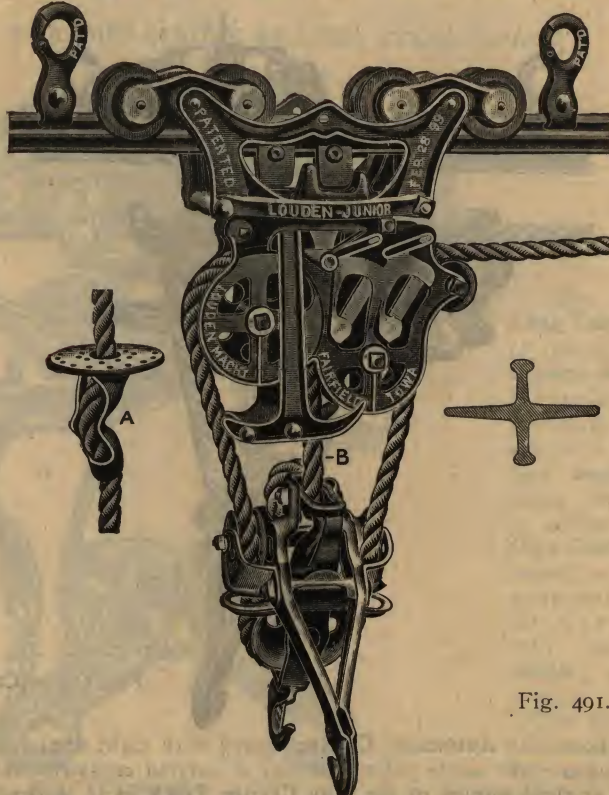


Fig. 491. (Chief.)

The Louden Junior Carrier has won its way to fame and favor by years of hard service where strength and efficiency were demanded. Its only successful rivals are the Louden Automatic and the Louden Reversible Sling Carriers.

The Louden Junior Steel Track Sling Carriers are built with engine trucks and adapted to run on our Double Beaded Steel Track. Like all of our Louden Junior Carriers it can be fitted to run on any steel track from 2 inches to $2\frac{3}{4}$ inches wide. We also build it to run on 4x4 inch wood track (see page 22, Fig. 492).

Like the Automatic Carrier the load may be carried into the mow at any height desired. This is done by adjusting the trip A, which is placed on the draft rope B. This is a valuable feature and is covered by our patents.

Fig 491 shows the Carrier rigged triple draft with right angle pulleys to deliver the load crosswise in the mow (see Fig. 412, page 38). It works equally well with parallel pulleys (see Fig. 450, opposite page). With either parallel or right angle pulleys it may be rigged double draft. Experience has proven that when slings are used it is best to use triple draft, and we recommend it.

The Carrier may be reversed by swiveling the lower part quarter way 'round, the same as with our Louden Junior Fork Carriers.



LOUDEN'S JUNIOR SLING CARRIER. RIGGED WITH PARALLEL PULLEYS.

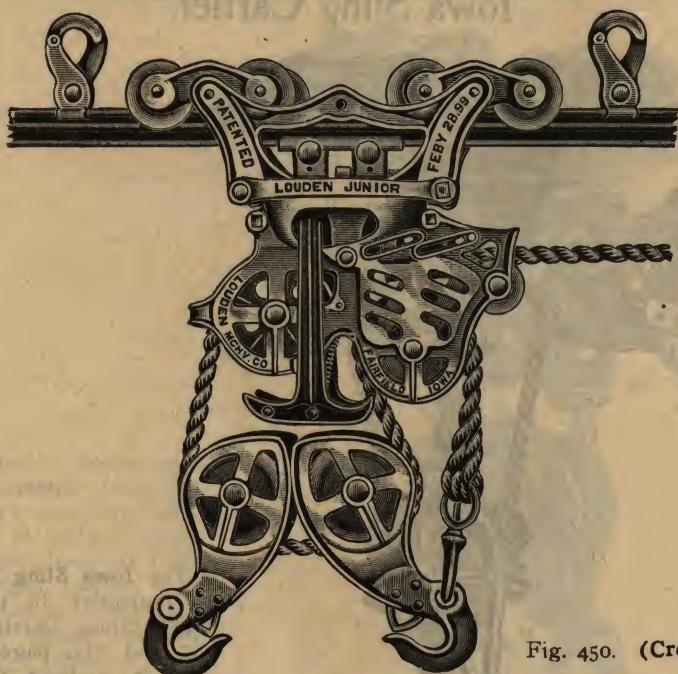


Fig. 450. (Cross.)

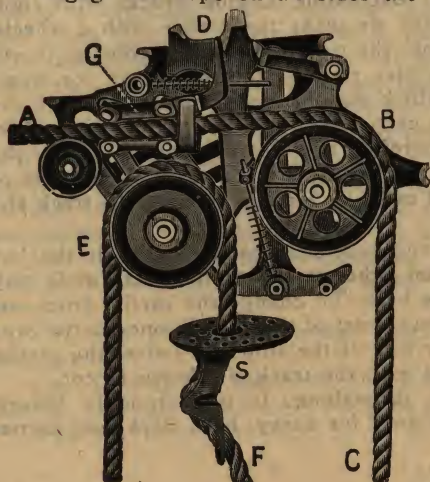
Weight of Carrier, Fig. 491 or 450, complete with track stop, adjustable trip, two sling pulleys and two end stops, 40 lbs.

The lock is **extremely simple** and easy to work, and at the same time is thoroughly reliable and easy on the rope. It consists of **upper and lower parallel clutches**, each about 4 inches long, set opposite each other and adapted to engage the rope on all sides the entire length of the clutches. The upper clutch slides in slanting grooves is the carrier sides, while the lower one is mounted on hinged legs.

They are arranged to **easily and promptly** engage the rope with an **iron grip** when the carrier is tripped, and just as easily and promptly release it when the carrier is latched to the track.

TO THREAD CARRRIER.

Set lock so the clutches G are open. Start end of rope in at A through clutches G and over pulley B. Pass down through Sling Pulleys at C (not shown) and up over pulley at E, down through adjustable trip S and fasten into Sling Pulleys at F.





Iowa Sling Carrier.

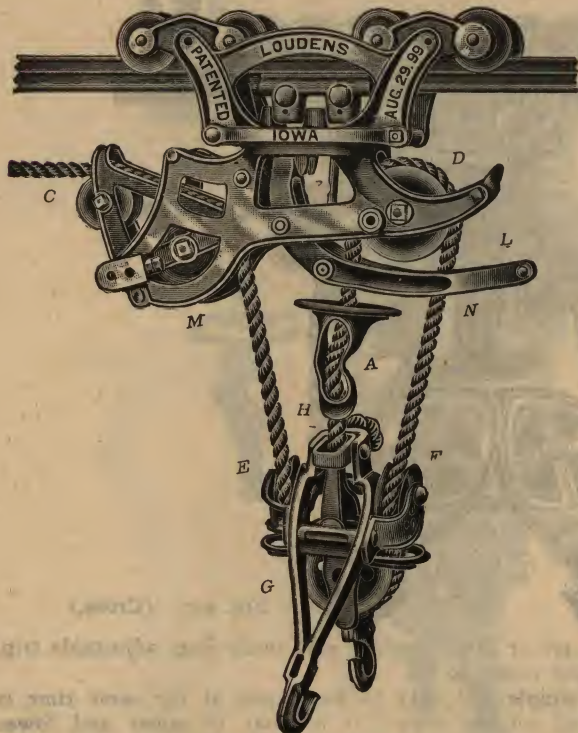


Fig. 821. (Chariot.)

The Iowa Sling Carrier is a companion to the Automatic Sling Carrier, Figs. 427 and 514, pages 16 and 17. It is built along the same lines as the Automatic Carrier, but it is fitted to run on our Double Bead Steel Track.

We make the Iowa Carrier with our Oscillating Engine Trucks with eight wheels, as shown in cut. When so desired we make the carrier with 4 wheels.

The lock is smooth so it will not injure the rope and yet it is solid so it will not slip. It is readily adjusted to fit any size rope or to compensate for wear.

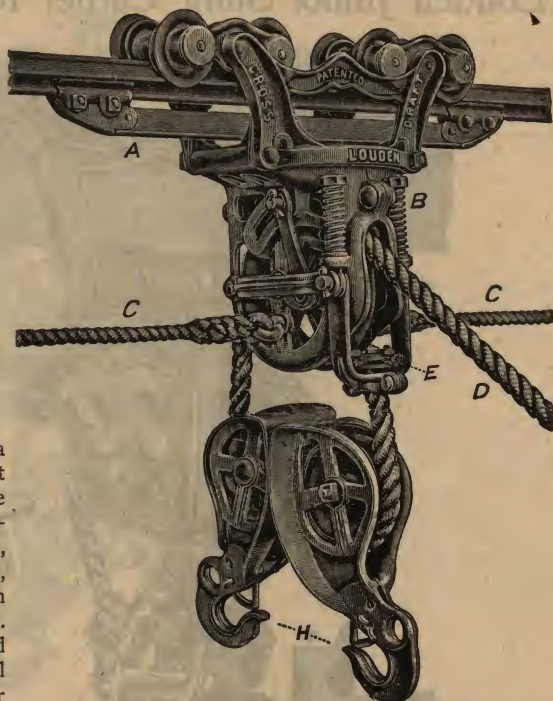
By means of the adjustable trip A, which may be moved up or down on the draft rope at the will of the operator, the carrier with its load may be **automatically run into the mow at any height**. Therefore it is not necessary to carry the load up to the track as most carriers do and then let it fall back to the bottom of the empty mow. When so desired, it will carry its load up close to the track and over high beams.

The Iowa Carrier is both a swivel and reversible carrier. With it the hay may be taken in from a drive-way and run either to the right or left, or it may be taken in from one or both ends of the barn. To change the carrier from one side of the stop to the other, swivel the lower part of the carrier, one-quarter way around, then pass the carrier to the other side of the stop and swivel the carrier on around until the lower part is parallel with the track, as shown in cut.

The Iowa Carrier is strongly built throughout. It is thoroughly braced, and like all Louden Sling Carriers, is designed for heavy, hard work, and carries its heavy loads with safety.



Louden's Cross Draft Carrier.



This Carrier works on a different principle from that of ordinary carriers. The draft rope D, instead of running parallel along the track, runs at right angles to it, passing down to the team in the most direct manner. The draft rope is used solely to elevate the hay and not to run the carrier along the track, the latter being done by the shift ropes C and C', which run around pulleys at the ends of the barn and then back to where the team works.

The Carrier is provided with an automatic lock which will hold the hay suspended at any height, and when high enough to pass into the mow, one of the shift ropes (C or C') is connected to the team, and as it returns to the starting place the carrier is drawn to that end of the barn. The shift rope is then disconnected and the Carrier is drawn back for another load.

The advantages of Cross Draft over ordinary carriers are in part as follows:
1st. The draft is more direct, it requires about one-half less draft rope and as it passes over only one large sheave in the carrier there is less friction, thus requiring less power to elevate the load.

2nd. The horse has to walk only about half as far and gets back quicker, thus saving time and also space in the barnyard.

3rd. The lock is entirely automatic and will hold at any height, so the load does not have to be elevated any higher than is necessary to let it pass into the mow.

4th. The empty sling comes down easier and quicker than with ordinary sling carriers.

5th. It does not start into the mow with a jerk, as ordinary carriers do, causing loose hay to shake off, but goes in smoothly and steadily.

Send for special circular.

Fig. 817. (Chaste.)



Louden Junior Sling Carrier for Wood Track.

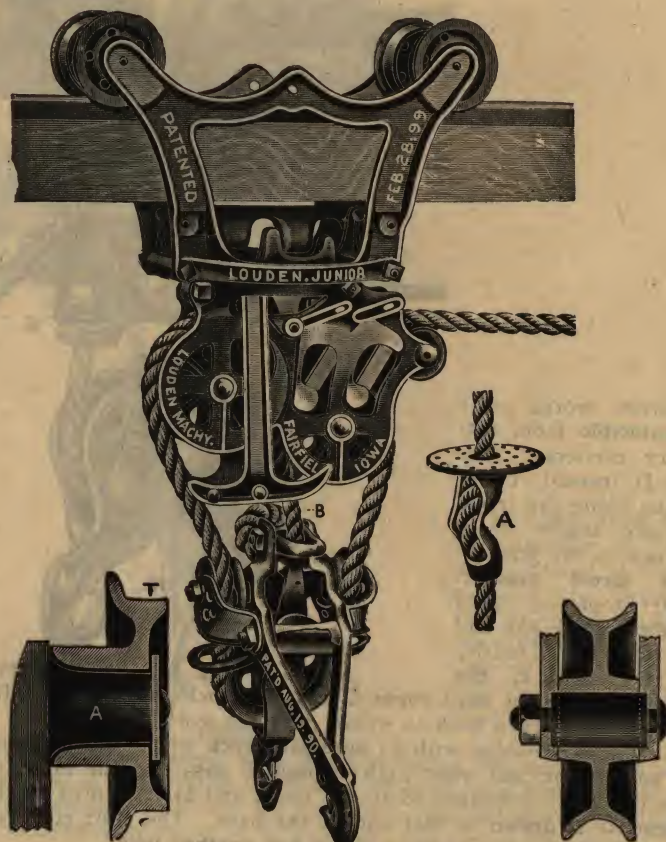


Fig. 492. (Commander.)

The Louden Junior Wood Track Sling Carrier, a companion for the Louden Junior Steel Track Sling Carrier, is the same as our Junior Steel Track Sling Carrier, except that it is built for a 4x4 Wood Track. The wheel arms are thoroughly braced the same as all our Junior Carriers, and it can never spread on the track with a heavy load. It may be used either double or triple draft and with Right Angle or Parallel Pulleys. Weight of Carrier, complete with Track Stop, Adjustable Trip and two Sling Pulleys, 42 lbs.

The sheaves or pulleys in all Louden Carriers are large and the groove is made to fit the rope. See B, Fig. 492. Rope runs easier over large pulley and wears better.



Reversible Sling Carrier for Wood Track.

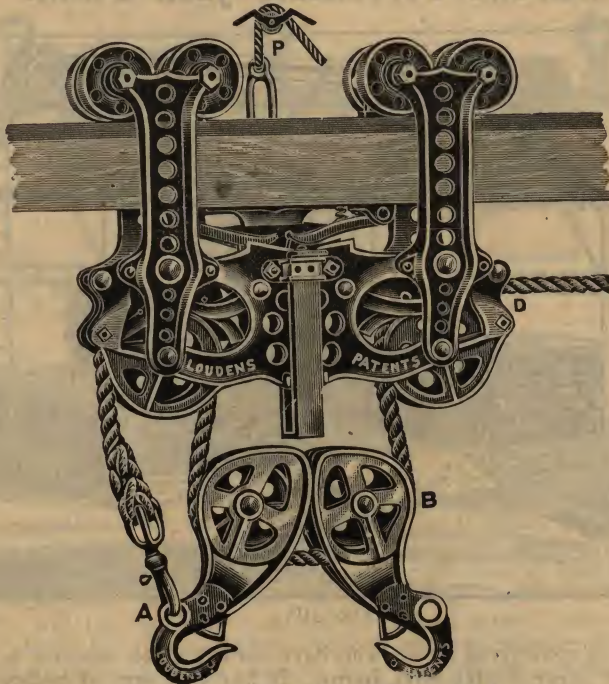


Fig. 315. (Champion.)

Fig. 315 represents our **Reversible Sling Carrier** rigged triple draft with **Parallel Pulleys**. Built to run on wood track only, usually 4x4, but can be adjusted to fit any track from $3\frac{1}{2}$ to 4 inches wide. This is one of the most successful Sling Carriers on the market, thousands being in use and giving satisfaction where others have failed.

It is fitted with 8 track wheels and is a strong, reliable carrier. The wheel arms are heavy and strong and do not spread and let the Carrier off the track when heavily loaded. The stop is positive and never fails to work easily with either Parallel or Right Angle Pulleys. Two sling pulleys, one track stop with lift link, comb pulley P. and one rope hook A are furnished with this Carrier. Weight complete, 52 lbs.

In designing the Loudens Carriers, **strength, durability and adaptability** for the work intended was the first consideration. To this we have added simplicity and compactness. Every piece that goes into the makeup of any of our goods has received close and careful attention, which gives a thoroughness and completeness to our goods that is found in no other line.



Louden's Reversible Jack Outfit.

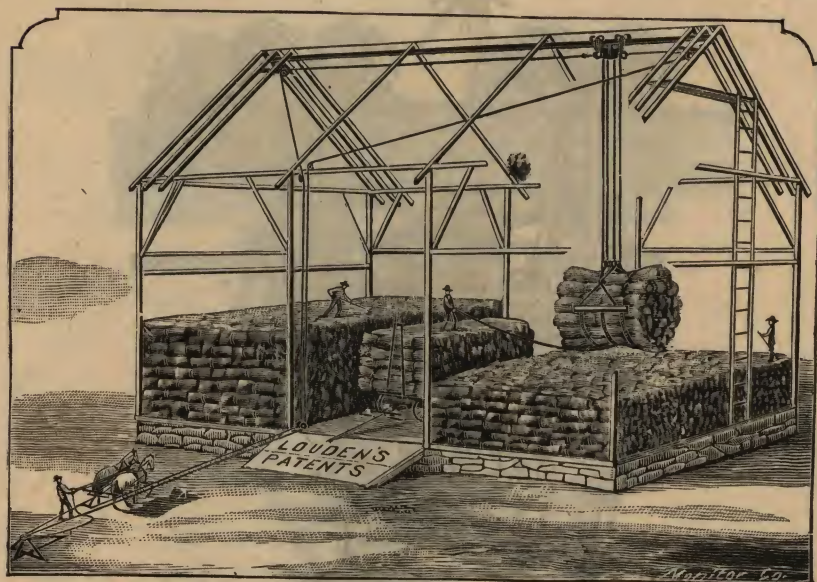


Fig. 316.

This outfit is considered by all who have used it to be superior to all others for sling use in large center-drive barns. It has **two sets of pulleys and two hoisting ropes** between which the weight of the Sling load is divided, thus making it easier on the ropes and pulleys. **One Sling load can be put in one end of the barn and the next one in the other end**, and so on, by simply driving the tear **right or left** around the jack set out in the yard.

By a simple adjustment of the ropes, which can be easily and quickly made by the driver, the Sling load can be **carried into the mow low down**, as shown in the cut, or be taken to the **top of the barn** before running into the mow. It can also be made to elevate the load at **any point along the track**, so as to take it from another driveway, or to carry it out of the mow, as well as into it.

It is absolutely **Universal** in its operation—taking the load up at any point along the track, elevating it to any desired height, and then carrying it in **either direction** into either mow, or out of them as desired. And in all these operations the load is carried by two sets of pulleys and two hoisting ropes—or, rather, an **endless rope** running in opposite directions from the carrier around opposite ends of the barn.

The cut shows it putting bound grain into the barn, for which it is well adapted, but it is excellent for handling hay, straw, fodder or anything else which can be handled with a sling. It is also well adapted for handling any kind of heavy merchandise in barns or warehouses and by substituting a Power Hoist for the jack it can be operated by power as well as horses.



Universal Sling Carrier With Extended Trucks.



Can be fitted to any
kind of Steel Track.

Enables a Light Track
to carry a Heavy Load.

Fig. 317. (Christopher.)

Fig 317 is built to run on our Steel Track, and (Carrier Fig. 316, not shown here, built to run on 4x4 wood track) are used with our **Reversible Jack** or with our **Power Hoist**. These Carriers require no track stop to hold them in place on the track or any tripping device to release the Carriers to run along the track. They will lift the load from any point and carry it to any height and then run it along the track in either direction without change of rope or hitch. This is done at the will of the operator in a very simple and easy way by the use of the **Reversible Jack** or **Power Hoist**. For full particulars regarding this Carrier and Reversible Jack, write for special circulars.

Louden's Universal Power Hoist.

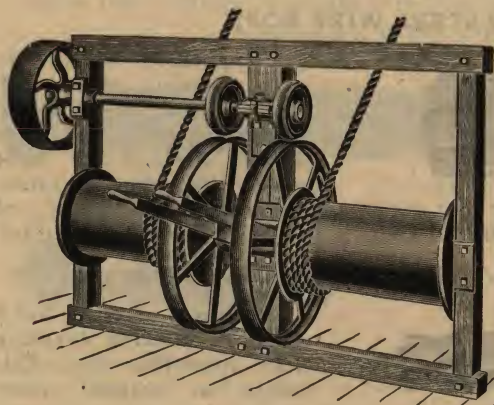


Fig. 318. (Mighty.)

With this Hoist and a Universal Carrier the load can be elevated to **any height at any point** along the track and then carried to **any other point in either direction** and lowered to its place—all without any change whatever of the ropes — the whole being under the complete control of the operator. It may be used with steam, electric, water or gasoline power.

Special circulars sent on application.



Louden's Junior Cable Carrier.



Fig. 621. (Combine.)

This is the simplest and easiest working Cable Carrier made. It is a companion for our Louden Junior Carrier, Fig. 430, but it is made to run on a Wire Cable, and is not a Swivel Carrier. It has the same lock as our regular Junior Carrier, and it never fails to work perfectly. The lock has a square catch and can not wedge fast as it does in other Carriers—this is an important point.

The end of the Draft Rope being fastened into the Carrier with our patent swivel, the trouble of kinking and twisting is overcome. It has a Wide Flaring Mouth and Round Top Fork Pulley, the same as all Louden Carriers.

With this Carrier you can use any kind of Fork or Sling. When Slings are used, it is necessary to use our Self-Locking or Binding Sling Pulleys.

Weight complete with Stop and Fork Pulleys, 26 lbs.

GALVANIZED STEEL WIRE ROPE.



Fig. 417. (May.)

about eight tons. This makes the BEST TRACK for Cable Carrier and Ricker.

GALVANIZED STEEL STRAND, ½-IN. DIAMETER.



Fig. 418. (June.)

than the Galvanized Steel Wire Rope and is used quite often.

Composed of six strands, seven wires to the strand, laid about a hemp center. We recommend this rope ⅝-inch diameter for cable track. Will stand an estimated breaking strain of

Composed of seven No. 8 wires. Estimated breaking strain about four tons. This makes a cheaper track



Louden's Senior Cable Carrier.

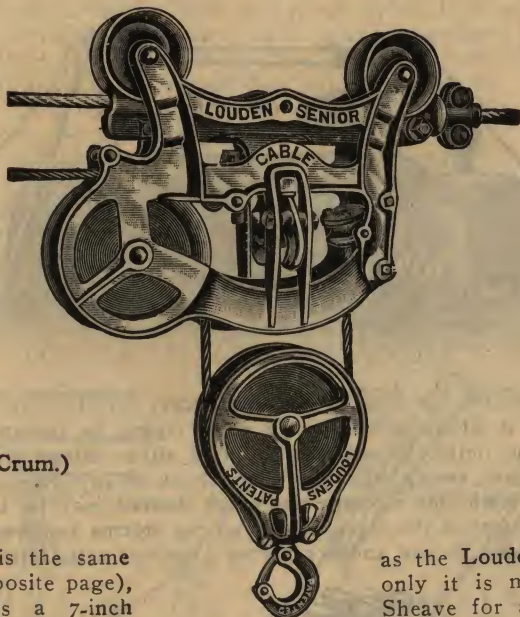


Fig. 660. (Crum.)

This Carrier is the same Carrier (see opposite page), heavier and has a 7-inch

Hoisting Rope in place of a common rope. It is a companion for the Louden Senior Carrier, Fig. 661, page 12, and it is like it with the exception it is fitted to run on a Wire Cable Track, and is not a Swivel Carrier. A wire hoisting rope is much more durable than a common rope, when used exclusively for heavy hoisting of all kinds. By using our Iron Knot and Patent Swivel on end of the draft rope where it fastens into the carrier, the kinking and twisting which has always caused so much trouble is overcome and makes the cable as easy to handle as a common rope. Weight complete with Stop and Fork Pulley, 36 lbs.

as the Louden Junior Cable, only it is made larger and Sheave for a $\frac{3}{8}$ -inch Wire

LOUDEN'S WIRE DRAFT ROPE.



Fig. 632. (July.)

made to work around a 7 or 8-inch pulley.

LOUDEN'S PATENT CABLE TRACK STOP.



Fig. 801.

For Junior, (March); Senior, (April.)

around the cable and holds it in position and at the same time allows it to hang straight below the cable so that it will always lock in the Carrier.

The Clamp A is securely attached to the cable. The stop B is swiveled at one end to the clamp A, while the other

end is a short sleeve which fits loosely



Louden's Cable Ricker.

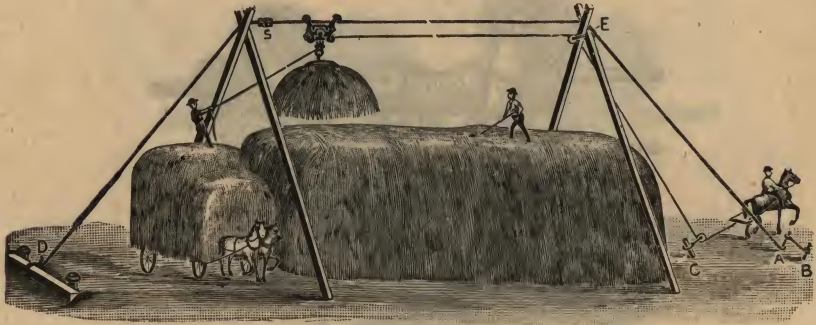


Fig. 597.

Fig. 597 illustrates our Improved Cable Ricker for stacking. Like all of the **Louden Carriers** it works perfectly and when rigged as shown above, makes a first-class stacking outfit. It can be used with either **Slings** or **Fork**, takes the hay from the wagon, sweep rake, hay slide, shock or any way it may be brought to the **Stacker**. With this rig **any size stack** desired may be built quickly and easily and when finished the stack will stand the **storms** and **weather**. Thousands of these **Stackers** are in use and are giving excellent satisfaction.



Fig. 598.

Fig. 598 shows the preferable way for fixing the upper ends of the poles to receive and hold the cable. They may, however, be held together by a good strong bolt, and in that event the cable will rest in the fork of the poles and thus do away with the notching shown in cut.

Send for circulars giving directions for putting up and operating this outfit.



Fig. 337. (Porto.)



Fig. 337½. (Rico.)

Fig. 337 is our Improved **Malleable Wire Cable Loop Clamp** used with our Cable Ricker.

Fig. 337½ is our Improved **Malleable Wire Cable Stop Clamp**, used with our Cable Ricker.



Cable Hook and Clamp.

Fig. 631 is Louden's Hoisting **Cable Hook** for **Wire Draft Rope** from $\frac{3}{8}$ to $\frac{1}{2}$ inch diameter. The end of the Cable is bent around a tubular stud, in a recess in the body of the hook, which is covered by a cap and is securely clamped in place by two bolts. It is made of the best Malleable Iron, strong enough for any team of horses and does not cut the cable.

Fig. 657 shows our **Wire Rope Clip** which is of the most improved pattern. The plate is malleable iron and has a corrugated seat to fit the cable. We make three sizes— $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ inch, which will also hold 5-16, 7-16 and 9-16 ropes respectively.



Fig. 631. (Cab.)



Fig. 657.

$\frac{1}{4}$ -in., (Franz.)
 $\frac{3}{8}$ -in., (Johnson.)
 $\frac{1}{2}$ -in., (Hooligan.)

LOUDEN'S WEIGHT RETURNERS.

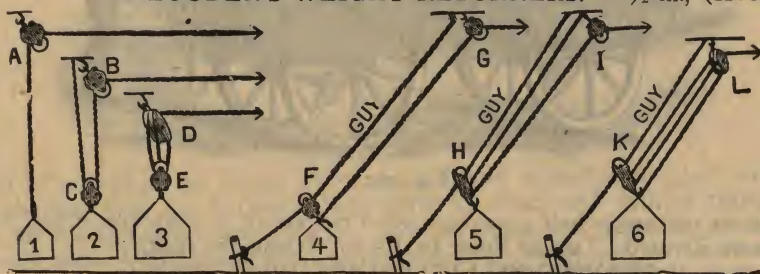


Fig. 382.

Fig. 382 shows the arrangement of our **Weight Returner** for different barns, Nos. 1, 2 and 3 are for **Center Hoist** barns, No. 1 being suitable for high, short mows No. 3 for long, low ones; and No. 2 for intermediate lengths and heights. Weight No. 2 should be twice as heavy as No. 1 and weight No. 3 three times as heavy to have the same returning power on the carrier.

Nos. 4, 5 and 6 are for **End Hoists**, the weights being carried over the wagon by guys secured to the end of the barn, and connected to stakes in the ground. No. 4 is suitable for moderately high, short barns; No. 6 for extremely long, low ones, and No. 5 for intermediate lengths and heights. The ends of the ropes with arrow points are attached to carrier.

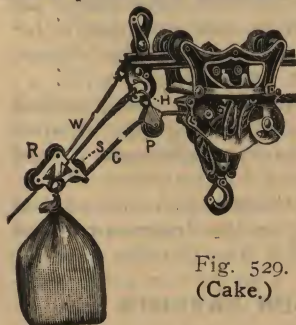


Fig. 529.
(Cake.)

A **wire guy** is preferable to a rope guy. The wire does not need to be taken down. Disconnect end from the stake and carry it around the barn out of the way. No. 9 wire is as large as is necessary.

Fig. 529 shows **End Weight Return** attached to **Carrier**. It shows our **Improved Return Pulley R** on wire guy, **Clamp Hook H** and **Pulley P**. When used like No. 6 a two-sheave pulley is used in place of Pulley P. In ordering state kind of track used to get Hook H to fit it.

A sack holding sand is the best for weight.



Louden's Center Trip Hay Slings.



Fig. 319.

This cut represents half a wagon load of hay rolled up with one of our Slings ready to be elevated. Two or three Drafts will "clean the rack,"

LEAVING NO LITTERINGS WHATEVER

and placing the hay in the mow or on the stack just as it lay on the load. There is no other device so well adapted to handle loose or bound grain, straw, fodder, etc.

We make several sizes and styles, to adapt the Sling for handling hay, bound grain and all kinds of forage, in the field or barn, in any shape it may be brought.

We were the originators of successful Slings and Sling Carriers and we warrant them to be superior to any others on the market. As with our other Hay Tools, we have made Slings and Sling Carriers a special study, and during the past twenty years we have thoroughly tested and greatly improved them. We are the acknowledged leaders in this class of goods. The following pages are designed to give information concerning the leading Slings and attachments for Slings which we manufacture. For additional information, we will gladly communicate by letter and send special circulars.

Fig. 320 shows the Center Trip Sling discharging its load. A sling is first laid on the hay rack and enough hay built upon it to make a sling load. Another Sling is then laid on that and another sling load of hay is built upon it, and so on until the load is completed.

To unload, the pulleys P P on the draft rope are spread apart and hooked to the sling at each end of the load. The horse pulling on the draft rope draws the pulleys P together and rolls up the hay as shown in Fig. 319, and then elevates it to the height desired.

ALL ADJUSTABLE SLINGS INFRINGE OUR PATENTS.



Center Trip Sling Discharging Its Load.

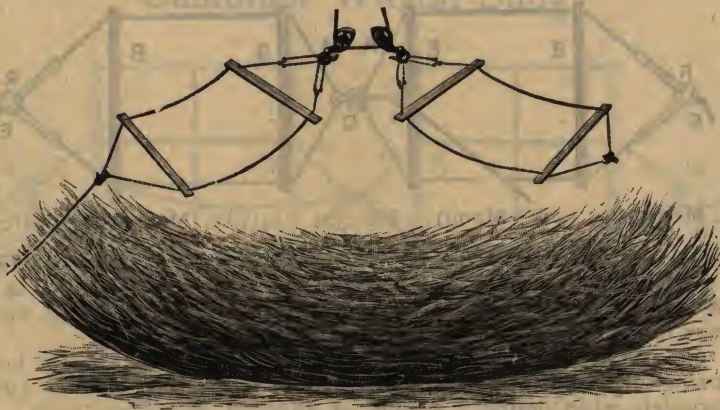


Fig. 320.

See How It Spreads the Hay.

It is tripped in the center below the hay and separates into two parts, letting the hay drop out between them, perfectly clear, and without tilting it on edge, as side trip slings invariably do. The hay being first rolled up, as shown on opposite page, **UNROLLS** when discharged and spreads out in the mow or on the stack as wide as the length of the Sling, and in **EXACTLY THE SAME SHAPE** it lay on the load.

Hay or grain cannot be delivered in better shape. Little or no space is required to clear the sling and the ropes never get caught under the hay as they do with side trip slings. But little labor is required in building a stack because the hay is dropped in a nice broad flake, which needs only a little smoothing to make the stack settle straight and turn water perfectly.

USING HAY SLINGS.

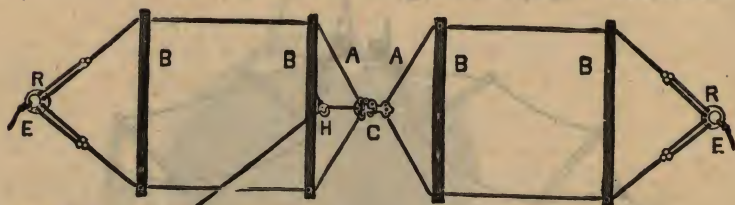
Like everything else, some judgment is required in using slings to obtain the best results. The strength of elevator, the length of rack, the size of wagon loads, and the space above beams in the barn should all be considered and the number of slings and their length adjusted accordingly.

Slings require more room over the beam than forks, therefore it is unwise to purchase a sling outfit that hangs away down below the track. We have always watched this point carefully and all our carriers and sling attachments have been made compact so as to occupy the least possible space.

We recommend laying the sling full length of the load, provided the rack is not too long and the room sufficient for the sling load to pass over the beams. Our experience has been that the rack should not be over sixteen feet long (and fourteen is better) for laying the slings full length, unless the barn, elevator and everything else are on a very large scale. Slings spread the full length of a fourteen to sixteen foot rack require about ten feet of space between the track and beams for the load to pass through.



Standard Wagon Sling.



(3½-ft., Monarch); (4-ft., Moon); Fig. 321. (4½-ft., Monsoon); (5-ft., Mars).

Fig. 321 represents our Standard Wagon Sling. It is **MADE ADJUSTABLE** to suit any length of rack and has our **PATENT EXTENSION** ropes E to draw Rings R from under the hay. We make the spreaders B 3½, 4, 4½ and 5 feet, but always furnish the 4 foot length unless otherwise specified.

The rope is full half inch and is clamped to the spreaders by ¾ hook bolts which permit the adjustment of the spreaders on the rope and the addition of extra spreaders when desired. Weight of Sling, 15 to 18 lbs.

LOUDEN'S THREE ROPE SLING.

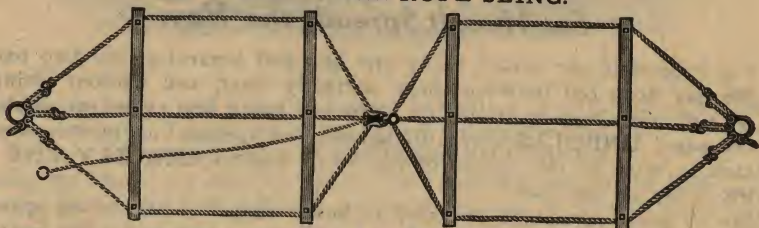


Fig. 600. (Modern.)

This Sling is made of 5 foot cross bars and with three ropes instead of two. Otherwise it is the same as our **Standard Sling**. It is especially adapted for straw or ordinary short hay. Weight of Sling, 20 lbs.

CENTER BAR SLING.

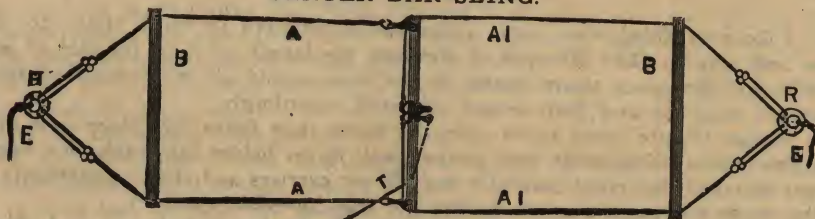


Fig. 323. (Money.)

This Sling is recommended for **handling bound grain**, and is good for **handling hay** and other material. The ropes A1 pass through clevises on the ends of the central bar and hook to the trip in the center, thus doing away with the side openines. Two additional spreaders can be put in for extra short stuff. Weight of Sling, 13 lbs.



California Wagon Sling

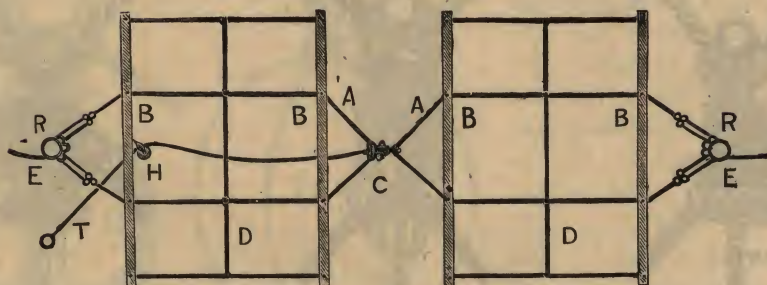


Fig. 324. (Moxie.)

The **California Wagon Sling** is designed for handling very short hay or headed grain and was so named on account of the great demand for it in the Golden State. It is the same as our Standard Sling with the addition of four extra side ropes and two cross ropes DD. It is adjustable and can be made to suit any size of rack or header wagon. By **adjusting the ropes** the distance between center bars may be reduced to fifteen inches. Length of spreaders, 6 feet; weight of sling, 28 lbs.

THE GROUND SLING.

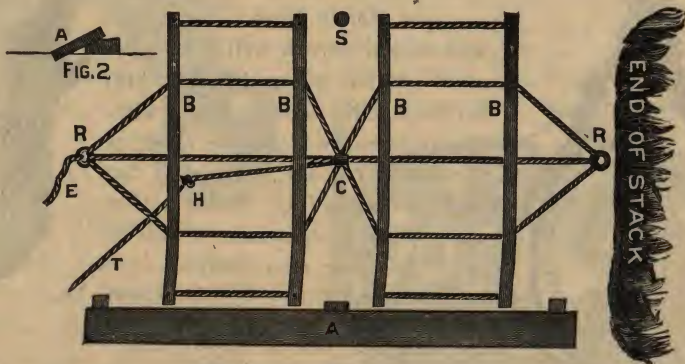


Fig. 325. (Mogul.)

This figure represents our **Ground Sling** laid on the ground, ready to receive the hay when brought in a hay sweep. The spreaders are 8 feet long, and the Sling can be adjusted in length from 12 to 15 feet between the rings RR. It will take all the hay two horses can bring in with the largest sweep rake. A, represents a plank sometimes used as an approach to help slide the hay on the sling. a sectional view of which is shown in Fig. 2. When desired, steel springs can be used in place of the ropes at the edges. This enables the operator to spread the Sling more quickly. Weight of Sling, 40 lbs.



Louden's Self-Locking Sling Pulleys.

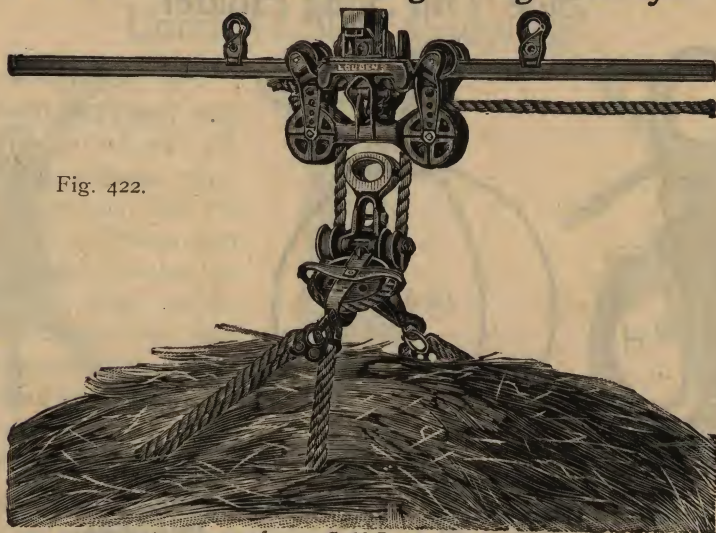


Fig. 422.

Fig. 422 represents a set of our **Self-Locking Sling Pulleys** in use with our improved Steel Track Carrier, the pulleys being locked together, but not yet registered in the Carrier. They will work with any carrier that uses a registering head, by getting a head to suit the Carrier. Fig. 330 is a front view of the pulleys locked together and Fig. 331 is a side view of the pulleys spread apart to connect the sling.

When the sling load is rolled up, they lock together, as in Figs. 330 and 422, before registering in the carrier. A good strong common carrier and track with a set of these pulleys will answer the purpose of a regular sling carrier. Thousands of them are in use, giving good satisfaction.

Registering Heads H furnished for any Carrier.



Fig. 331.

(Mason.)



Fig. 330.

We build these Pulleys larger and stronger to work with the Louden Senior Carrier.



Registering Heads for Louden's Self-Locking Pulleys.

The following are cuts of the Registering Heads which we make for our Self-Locking Sling Pulleys to fit the different Carriers named:



RH1.
Louden



RH2.
Hall



RH3.
Star



RH4.
Leader



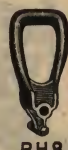
RH5.
Church



RH6.
Porter



RH7.
Milwaukee
Reversible



RH8.
Milwaukee
Swivel



RH9.
Burbank's
Eclipse



RH10.
Ney and
Superior



RH11.
Oborn



RH12.
Jordan



RH13.
C. B. & Q.



RH14.
Myers'
O. K.



RH15.
Ashland



RH16.
Myers'
Combination



RH17.
Ideal and
Jumbo



RH18.
Janesville
Deadlock



RH19.
Hay Maker
or Imperial



RH20.
Porter's
Swivel



RH21.
Boyd



RH22.
Diamond



RH23.
New
Diamond



RH24.
Boyd
Reversible



RH25.
Unloader
Clover Leaf

Registering Heads will be made to fit other Carriers when there is sufficient call for them. When in doubt as to the head required, send the fork pulley of your carrier by express, prepaid, and we will fit the pulley with the proper head and return fork pulley with order.

LOUDEN'S SLING BINDING PULLEYS.

The Fork Pulley (A) runs up through the binding pulley (B) when the sling load is rolled up, and registers in the Carrier the same as it does with a fork. This pulley is recommended for carriers having a smooth fork pulley and especially for those having a swinging arm to run into pulley.



Fig. 332. (Mentor.)

Special Circular giving additional information on application.



Louden's Fork Clevis.



Fig. 652.

(Maroon.)



Fig. 653.

Figs. 652 and 653 represent our Fork Clevis A, attached to Sling Pulleys, by means of which a fork can be used instead of a sling. Sometimes it may be desirable to take off part of the load with a fork and to clean up the rack with a sling. The purpose of the Fork Clevis A is to meet this need.

The fork can be hung in the middle or one-third way from one end as may be necessary to balance it with double or triple draft. Fig. 652 shows it used in connection with our Parallel Pulleys, and Fig. 653 with our Self-Locking Pulleys. It costs but little and is a handy device. B shows upper end of Grapple Fork.

Right Angle and Parallel Pulleys

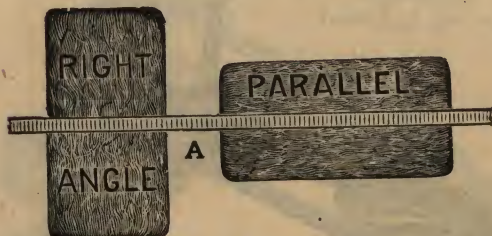


Fig. 412.

Fig. 412 shows how the hay is deposited in the mow with respect to the track A when Right Angle or Parallel Sling Pulleys are used. The Right Angle Pulleys spread the hay wider in the mow than the Parallel Pulleys unless the latter are twisted quarter round before tripping the sling.

Our regular Sling Carriers and Sling Pulleys are adapted to use Triple Draft which we consider better for large sling loads. For Triple Draft use $\frac{3}{4}$ -inch manilla rope. For Double Draft never use larger than $\frac{7}{8}$ -inch manilla rope.



Louden's Triple Harpoon Fork.

Patented.

EASY TO HANDLE—NEVER OUT
OF REPAIR.



WEIGHS ONLY TWELVE POUNDS.
WILL CARRY HALF A TON.

Fig. 350. (Peerless.)

Our Triple Harpoon stands without a rival. The secret of its success lies in the fact that it BINDS its load from top to bottom which prevents the littings so common to other forks. It holds the load close to the carrier, and drops it in good shape for handling. The tines are small and tapering, and enter damp or green hay easily, and it can be set with either hand or foot. We furnish this Fork in larger size when desired. It is superior to any Harpoon Fork made

Write for special circular giving testimonials and making comparison with other forks



Fig. 353.

Standard, (Peny)
31-inch (Pocket)
Alfalfa, (Pants)

OTHER HAY FORKS.

Fig. 353, Harris' Double Harpoon Fork, made in three sizes.

Fig. 356, Nellis' Single Harpoon Fork.

There are no better Double and Single Harpoon Forks made.



Fig. 356. (Poker.)



LOUDEN'S SIX TINE BALANCE GRAPPLE FORK.

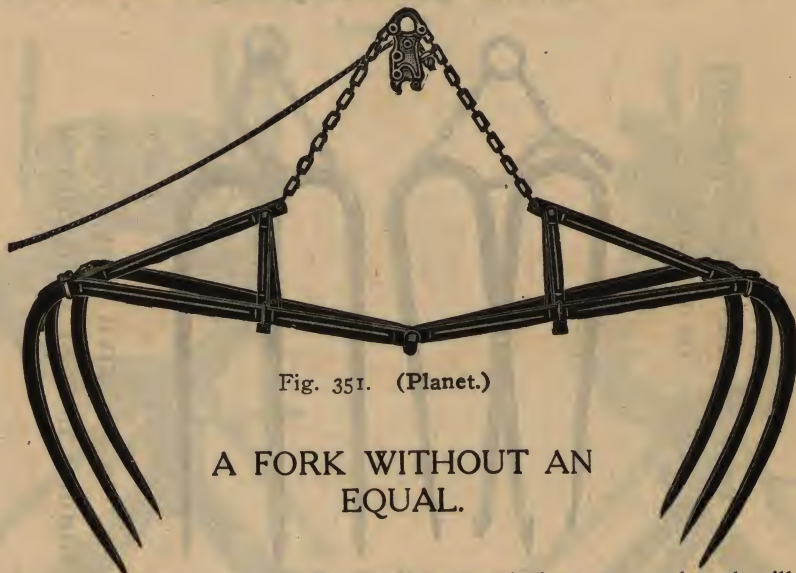


Fig. 351. (Planet.)

A FORK WITHOUT AN EQUAL.

Every one who has used this Fork knows it has no equal and will take pleasure in recommending it. The "arched support" is the secret. This feature is covered by our patents and it is the greatest improvement ever made in Grapple Forks. It secures a perfect balance by means of which the fork can be either opened or closed with the slightest touch. It is adapted to all kinds of hay and will handle the largest and smallest load with equal precision. It is especially adapted for short hay and straw, which it handles better than any other fork in market.

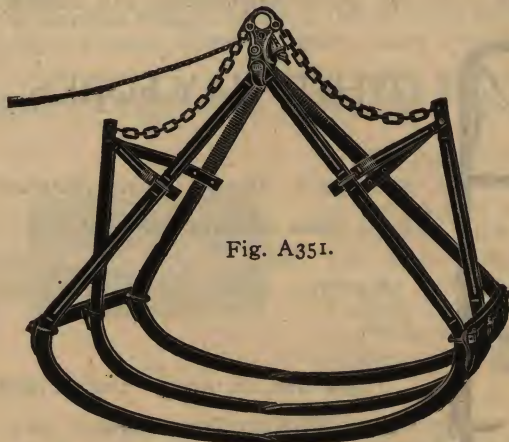


Fig. A351.

It spreads the hay well in the mow or on the stack, thus making better stacks and saving the labor of tearing the bunches apart. It is easily handled and it cannot be beaten in any respect by any fork that has ever been produced.



Louden's Four Tine Balance Grapple.



Fig. 648. (Prophet.)

IT NEVER FAILS.

These Forks are made of the best and stiffest steel that can be procured. The tines are perfectly drawn on **both ends** so as to give all the strength required where it is needed, and yet secure all the lightness possible. There is no other design so neat and yet so strong. None other so easily operated.

There are no holes in the tines except at the inner end. The parts are all securely clamped together with bolts.

It is the **essence of simplicity**, having no cumbrous, rigging to weight it down or interfere with its working. It has no toggle joints but is composed of a pair of substantial frames simply and securely hinged together. A (Fig. 648) shows the Malleable connection of the Fork to which the head is attached when lifting its load.

Its mechanical construction as well as its operation is all that can be desired.

Fig. 351 shows **Six-Tine Fork open**; Fig. A351 shows **Six-Tine Fork closed**; Fig. 648 shows **Four-Tined Fork open**.

SIZES AND WEIGHTS.

Standard Six-Tine—Spreads when open, 4 feet 10 inches; tines go into hay 2 feet; width of outside tines, 19 inches; weight, 45 pounds.

Standard Four-Tine—Same dimensions; weight, 40 pounds.

Large Six-Tine—Spreads when open, 6 feet 7 inches; tines go into hay 2 feet; width of outside tines 25 inches; weight, 50 pounds.



Louden's High Grade Pulleys.

Patented May 20, 1902.

KNOT PASSING PULLEYS.



Fig. 467. (Paragon.)

Fig. 467, Malleable frame; sheaves 6 inches diameter; select hard maple seasoned in oil.

Fig. 494—same frame with 6-inch iron sheaves.



Fig. 494. (Passport.)

DRAFT PULLEY.



Fig. 468. (Prelude)

Fig. 468, Malleable frame; sheaves 6 inches diameter; select hard maple seasoned in oil.

Fig. 495—same frame with 6-inch sheave.

The sheaves in Pulleys shown on this page are interchangeable.



Fig. 495. (Password)



Fig. 553.

Louden's High Grade Pulleys are the finest design and most substantial Pulleys in market. No **Sharp Corners** to wear the rope. The sides are made **separate** and can be taken apart for repairs. The eyes are **heavily ribbed** and have **tubular swivels** which makes them stronger and better than others. The sheaves run on **large metallic bushings** which are let into **recesses in the sides** and are held in place by a bolt. The bearings in the iron sheaves are **chilled** and run on **malleable bushings**, which make them extremely durable.

Fig. 553 is a sectional view of Iron Sheave Pulley, showing the tubular eye, the **projection** in the opening of frame which protects the rope from the edges of the sheave, the metallic bushing on which the sheave turns, the recess in the frame in which the metallic bushing rests and the bolt that holds it in place. These are the best made pulleys in the market.



LOUDEN'S HIGH GRADE PULLEYS CONTINUED.

LOUDEN'S MAMMOTH PULLEY.



Fig. 519. (Pencil.)

It is built for **heavy work**. Has 7-inch select hard maple sheaves **seasoned in oil**. It has the tubular swivel eye, large metallic bushings on which the sheave turns, held in the recesses in the frame by bolt. The frame is made in two parts, held together by rivets and bolts. It has the guard over the upper edge of the sheave to prevent the rope from cutting. In fact, it has all the good features of pulleys shown on page 42 and is **larger and stronger**. Large sheaves make it easy on the rope. It is fitted for chain attachments (see Fig. 362 and 363, page 47). Parties once using this pulley will buy no other.

LOUDEN'S CABLE PULLEYS.



Fig. 579. (Perfect.)

Our Cable Pulleys are made with a malleable iron frame and have all the good features of our High Grade Pulleys—the tubular swivel eye, frame made in two parts, held together with bolts and rivets—large metallic bushing, held in recess in the pulley frame by a bolt—projections or guards in the opening of the frame to protect the cable from the edge of the sheaves (see page 42, Fig. 553.) We make them only with iron wheels and the pulley throughout it made **extra strong**. The hole in the sheave is chilled and turns on a malleable bushing. The groove in the sheave is made suitable for wire cable from $\frac{3}{8}$ to $\frac{5}{8}$ inch in diameter. A common rope may be used in these pulleys when desired.



Fig. 651. (Kuroki.)

Fig. 579 is cut of our Cable Pulley with 8-inch sheave.

Fig. 651 is cut of our Cable Pulley with 7-inch sheave.

They are the **strongest and most durable** pulleys made.



Louden's X. L. Malleable Case Pulleys.



Fig. 612. (Pin.)

Our **X L Pulleys** are similar to our regular malleable case pulleys. They are good, strong, substantial pulley, much superior to a cast or steel frame pulley and are made to meet the demands of the trade where a cheaper pulley than our **High Grade** pulleys are wanted. The sheaves are 6-in. in diameter, turn on a large metallic bushing, held in place by a bolt the same as all of the Louden Pulleys and has tubular swivel eye. (See Fig. 553, page 42.)



Fig. 613. (Peck.)

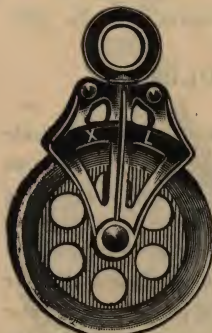


Fig. 614. (Page.)

Fig. 612 is our **X L Knot Passing Pulley** with iron sheave.

Fig. 613 is our **X L Knot Passing Pulley** with wood sheave.

Fig. 614 is our **X L Draft Pulley** with iron sheave.

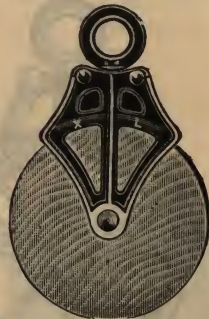


Fig. 615. (Pink.)

Fig. 615 is our **X L Draft Pulley** with wood sheave.

SOME SPECIAL PULLEYS.



Fig. 359. (Pointer.)



Fig. 435. (Perch.)

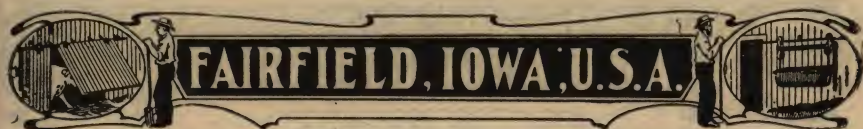


Fig. 360. (Parasite.)

Fig. 359 is our **Return Pulley** with 3-in. wood sheave for $\frac{1}{2}$ -in. rope and smaller. Made the same as our high grade pulleys on page 42.

Fig. 360 is our **Malleable Case Check Pulley** with $1\frac{1}{4}$ in. iron sheave. Built extra strong for $\frac{3}{8}$ -in. rope and smaller.

Fig. 435 is our **Comb Pulley**, for lifting cord to pass over, in the peak of barn. It has $1\frac{1}{4}$ -in. iron sheave.



Louden's Upright Floor Pulleys.



Fig. 364. (Palace.)



Fig. 365. (Parlor.)

These pulleys are designed for use on the floor and in other places where common pulleys lop over when the rope is loosened, thus causing the rope to rub and bind in the pulleys. Every user of Hay Tools knows this is annoying and expensive.

Our upright **Floor Pulleys** do not lop over or unhook, nor bind and hold the rope while the carrier is being drawn back. A slot in the bottom of the Pulley slips over the head of the skein bolt, which is screwed into the floor, and, while holding the pulley upright, lets it turn freely in any direction. They may be used with as good results on a wall or a post in a vertical or inclined position, as in a horizontal position. The Double Pulley is just the thing for our **Universal Sling Outfits**.

LOUDEN'S FORK PULLEYS.



Fig. 366. (Togard.)

Fig. 366 is our **Fork Pulley** used with all of our **Fork Carriers**. It has a 4-in. sheave and a strong malleable iron frame with safety hook that has the tubular swivel. It is built on the same line as our high grade pulleys shown on page 42.

Fig. 361 is the **Fork Pulley** used with our **Single** and **Two-Pole Stackers**, and also with the old style **Rod Carrier**.

Both these are good, strong, substantial pulleys and may be used for many purposes where a larger pulley is not desired.



Fig. 361. (Power.)

SNATCH PULLEY BLOCK.



Fig. 623. (Pawn.)

This device shortens the distance the horse travels. Tie a knot in the rope and put a washer in front of it (see cut).

The rope can then be thrown off the **Snatch Pulley** and the **Fork** returned to the load without waiting for the return of the horse.

Other Pulleys.

CAST FRAME AND STEEL FRAME PULLEYS.



Fig. 729. (Peter.) Fig. 522 (Presto.) Fig. 520 (Paddle.) Fig. 521 (Puritan.)

Fig. 729, Cast Frame Knot Passing Pulley, 6-inch wood sheave, has large, loose pin, self oiling axle.

Fig. 522, Cast Frame Draft Pulley, 6-inch wood sheave, has large, loose pin, self-oiling axle.

There are no better Cast Frame Pulleys made.

Fig. 520, Steel Frame Knot Passing Pulley with malleable eye, 6-inch wood sheave, turns on a large iron bushing, held in place by bolt.

Fig. 521, Steel Frame Draft Pulley with malleable eye, 6-inch wood sheave turns on a large iron bushing, held in place by bolt.

All these pulleys are also made with iron sheaves.

WOOD FRAME PULLEY—REED PATTERN.

The frame is made of hard wood held together by rivets at the top. It is provided with wrought steel yoke to support the large, hollow, self-lubricating axle on which the sheave turns. Sheave made of hard maple. A good strong pulley. Fig. 641 shows the pulley with steel hook. Fig. 642 shows pulley with malleable eye.



Fig. 641. (Ray.)

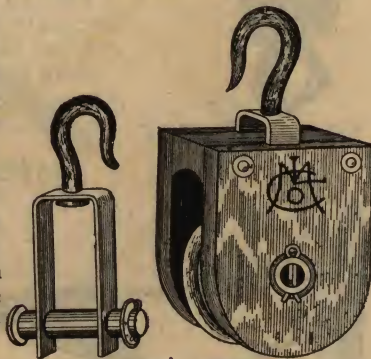


Fig. 642. (Frank.)



Louden's Pulley Changer.

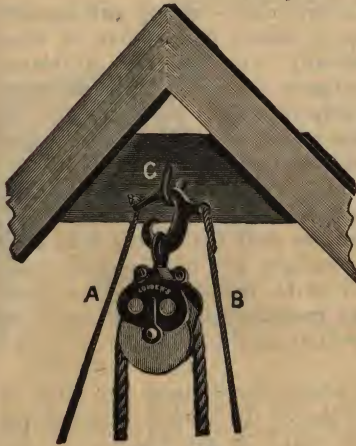


Fig. 438.

(Prime.)

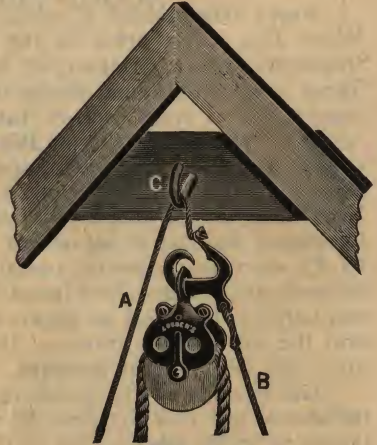


Fig. 439.

Our **Pulley Changers** are used to remove pulleys from one hook to another in the peak of barn and other places, thus preventing climbing, much hard work, and saves time. A B are the ends of a rope fastened to the Pulley Changer and when thus fastened makes an endless cord long enough to come down within reach. When it is desired to attach a pulley to a certain hook, the pulley is attached to the Changer, then the cord A, Fig. 439, is drawn through the hook C until the **Pulley Changer** assumes the position shown in Fig. 438. The pulley is then in position, attached to the hook and ready for use.

To remove the pulley from the hook, pull on the rope B and the Changer will assume the position shown in Fig. 439 and with the pulley may be drawn to the operator, when the pulley can be removed and attached to another changer if desired.

These Pulley Changers are largely used in connection with swivel hay carriers. This is the most practical Pulley Changer made and costs but a trifle

PULLEY CHAIN ATTACHMENTS.

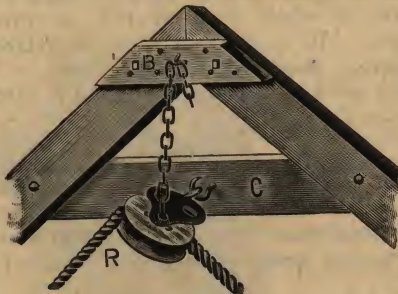


Fig. 362.



Fig. 363.

These cuts show how a chain can be attached to a pulley to hold it in a horizontal or upright position and keep it from tipping over and wearing the rope. Can be attached to any pulley having a bolt or hollow pin. Our **Mammoth Pulleys** are specially fitted for chains.



Use of Pulleys.

Every article about a haying outfit should be first-class—strong and durable. When Hay Tools break in the Haying Season it means delay; loss of time; frequently loss and injury of hay, and occasionally causes serious accidents. These breakages occur chiefly from the use of poor pulleys. It is therefore important that every user of Hay Tools should buy first-class pulleys.

We make a specialty of **High Grade Pulleys** which we illustrate on pages 42 and 43. We have given special care and attention to the designing of our pulleys, taking into consideration every detail which would add to their merits. In making the eye and the frames we have placed the metal where the strength is needed, and cut it out where it is not needed, so that the pulley may have all the strength necessary, and at the same time be light and neat and not cumbersome to handle. The frame is made in two parts, held together by rivets and bolts. The wheel or sheave turns on a **large metallic bushing**, which is set into the sides of the frame of the pulley and held in position by a bolt. This gives the pulley **great strength**.

The opening in the frame has a projection which stands over the edge of the sheave and thus protects the rope from the edge of the sheave. The groove in the pulley is designed to fit the rope and this makes it much easier on the rope than ordinary pulleys.

We handle the cheaper grade pulleys, but we cannot too strongly recommend the use of the **best pulley** that can be purchased. Do not be persuaded to use a cheap pulley. The saving is only a trifle in the first cost, and the use of a cheap pulley may mean much damage and loss in harvest. The **best** is the **cheapest**.

CENTER TRIP DUMP BOX FOR ELEVATING GRAIN.



Fig. 630. (Mack.)

The **Center Trip Dump Box** is designed to use with Hay Carrier and Track. It quickly fills the largest crib or granary no matter how long or how high. It will work in any crib or granary having a space 6 feet high and 7 feet wide for box to pass through. It takes a whole load in two or three drafts. It is a great time and labor saver. **Scooping corn or grain** is as hard work as pitching hay, and it takes much time.

The elevator separates at the bottom, as shown in cut., and lets everything out freely. A slight pull on the trip cord will bring it into a latched position, where it will stay until it is replaced on the wagon and the lever is set to dump again. Two boxes can be placed on the running gears of wagon in place of a wagon box.

The latches at each lower corner are simple and durable and are sure to operate easily and promptly. The boxes are substantially made with good solid cleats, straps and end gates and are thoroughly braced for heavy work. This valuable device should be used by every grain raiser.



Louden's Patent Hay Door.



Fig. 347. (Pride.)

Our Hay Door is hinged to the barn at its lower end and has an "extended connection" from B B with the Fork Pulley P of carrier, so as to give necessary elbow room, to open and close it with the carrier the same as taking up a forkful of hay.

It is the best and cheapest Hay Door ever invented, is inexpensive to make, is not affected by the wind and can be opened or closed from the ground, either by hand or with a horse. It shuts up close to the track and does not require extra tackle to operate it. Can be made as large as the gable of the barn.

A set of fittings is one pair of Off-Set Hinges, two Hooks with staples and two Hooks B B for extension ropes. For large doors three hinges should be used.

Fig. 347 shows Extension Support. For detailed view, see Fig. 380, page 15.

LOUDEN'S OFF-SET HINGES.

Fig. 349 shows our Off-Set Hinges. These Hinges are indispensable for gable doors. They allow the door to lap on the siding and keep out the rain. They are made of Malleable Iron, wide enough to insure a solid bearing on the door and giving ample room for bolts or screws. They are strong and durable and handle heavy doors safely.



Fig. 349. (Puss.)

LOUDEN'S BRACKET PULLEY HOLDER.

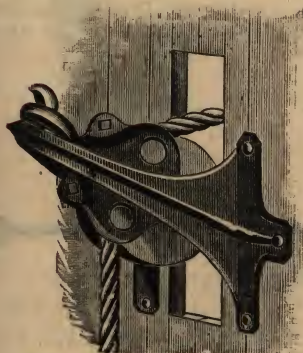


Fig. 348. (Pyramid.)

Fig. 348 is our Bracket Pulley Holder, made of Malleable Iron and used to carry the draft rope out through siding. Any kind of Pulley may be used. To attach Holder cut a hole in siding 4 inches wide and 8 or 10 inches high. Bolt Holder on as shown in cut, so the hook will be even with the top of the hole. The work can be done from the inside.



Louden's Track Hangers.

FOR STEEL TRACK.



Fig. 498 [Carson]

Fig. 803 [Trout]

Fig. 499 [Casey]

Fig. 500 [Camp]

Fig. 501 [Cahill]

Fig. 498 is our **Standard Two Part Steel Track Hanger**, attached to short piece of Junior Double Beaded Track.

A498 is our **Senior Hanger**, which is the same pattern as the Standard, but is longer.

Fig. 803 is our new **Link Hanger**, which may be made any desired length, by making the link longer or shorter. It may be used any place, but is particularly adapted to **uneven ceilings**, etc.

Fig. 499 is our **Victor Two Part Steel Track Hanger**, attached to short piece of Louden Junior Track.

Fig. 500 is our **Light Two Part Hanger**, attached to a piece of Track.

Fig. 501 is our **Solid Slide Hanger**, attached to piece of Junior Double Beaded Track.

The Hangers, Figs. 500 and 501, are good, substantial Hangers. They are as strong as the hangers that are made by our competitors. Our other Hangers 498, A498, 499 and Fig. 803 are heavier and stronger, and we therefore recommend their use.

These cuts show our Track Hangers applied to our Patent Double Beaded Steel Track. They are made to fit our Single Beaded Steel Track and are used with that Track, and work equally as well with it.

FOR WOOD TRACK.

Straight Hang Hook for Wood Track.

Made in Various Lengths.



Fig. 371.

12-inch (Cheese); 14-inch (Canna);
16-inch (Chestnut).

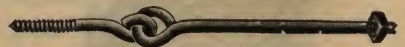


Fig. 372. (Cairo.)
Jointed Hang Hook.
for Wood Track.



Louden's Rafter Brackets



Fig. 424. (Casper.)



Fig. 425. (Caesar.)

Fig. 424 is Louden's Improved Malleable Bracket, the strongest and best Rafter Bracket made. Fig. 425 is the common pattern.



Fig. 440. (Cain.)



Fig. 465. (Cubeb.)

Fig. 440, Crimped Steel Bracket. Fig. 465 is our Ridge Pole Bracket, used when the track is hung parallel to a joist or 2-inch timber.



Fig. 675. (Cute.)



Fig. 373. (Cement.)



Fig. 725. (Beam.)

Fig. 675 is our Side Rafter Bracket, used for hanging track to rafters on one side of roof. Fig. 725 is our Side Beam Bracket for hanging track parallel to the side of a timber. Fig. 373 is our Barbed Steel Nail for putting on Rafter Brackets.



Louden's Pulley Hooks, Hook Bolts, Etc.

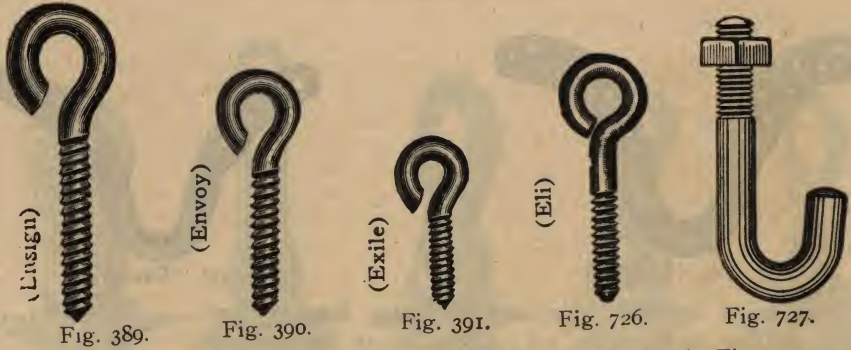
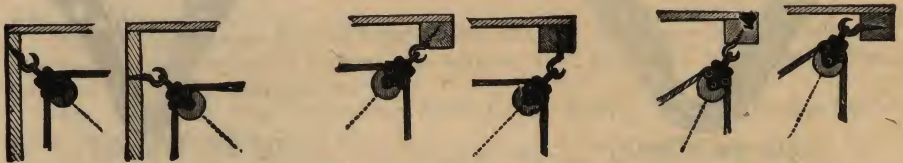


Fig. 389, Floor Hook $\frac{3}{4} \times 7$; Fig. 390, Rafter Hook, $\frac{5}{8} \times 6$; Fig. 391, small Hook, $\frac{1}{2} \times 3\frac{1}{2}$; Fig. 726, Screw Eye, $\frac{1}{2} \times 5$; Fig. 727, Hook Bolt, of which we carry several sizes in stock.

HOW TO SET PULLEY HOOKS.



Pulley Hooks should always be set so they will stand straight with the line of draft, as shown by the dotted lines. When the pull is **crossways** it will **bend the hook**. Of the above the 1st, 3rd and 5th are right, while the 2nd, 4th and 6th are wrong. It is the **Cross Pull** that bends or breaks the hook. A $\frac{5}{8}$ or $\frac{3}{4}$ hook put in right will stand more than a $\frac{7}{8}$ -inch hook put in wrong.



Fig. 469. (Province.)

Fig. 469, our Patent Pulley, hooks to clamp on our Single Beaded Steel Track. Fig. 470, same for Double Beaded Steel Track.



Fig. 470. (Provost.)



Fig. 654.

Fig 654 is our Malleable Socket Wrench for bit brace. We make four sizes— $\frac{1}{4}$ (Neller), 5-16 (Spear), $\frac{3}{8}$ (Stephens), and 7-16 (Vernon). They are cheap and efficient.

Louden's Hoisting Single Tree.



Fig. 344. (Prince.)

This **Single-Tree** does not drag against the horse's legs, and the traces do not unhook nor get under the horse's feet in backing or turning. The traces pass through keepers (K) and along back of single-tree to hooks in center. The single-tree being bent, this brings it close to the horse, like a breeching, without having to shorten the traces, and it is held up by a cord (C), having a snap (S), which hooks into the trace carrier iron. The eye to which the draft rope is fastened is swiveled, which keeps it from kinking. It is just the thing for all kinds of hoisting, as well as for plowing ice, etc.

Louden's Spreader Attachment.

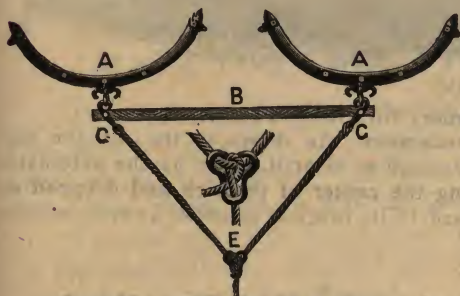


Fig. 345. (Pension.)

Single-trees remove the hooks from ends of Spreader C, hook on Single-tree and replace hooks and bolts.

Fig. 345 shows our **Spreader Attachment** by which two **Single-trees** can be hitched together for use with a team. For ordinary hoisting purposes, we use a rope with a spreader and attach the hoisting rope to it at E, as shown by enlarged figure in center. For other work a chain may be used. There is no other rig equal to this for four or six-horse teaming, as it does not strike the horse's legs and causes no weight whatever on the necks of the team behind. To attach



Fig. 367. (Emery.)

Fig. 367 is our **Lightning Rope Hitch**. It is instantly attached and detached or adjusted to lengthen or shorten the rope. The only Hitch with **Patent Safety Hook**.

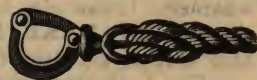


Fig. 383. (Excelsior.)

Fig. 383 is Louden's **Swivel Rope Hook** fitted with our patent safety point.



Louden's Single Pole Stacker.

As Rigged for Fork



Fig. 338.

(Fittings for Fork, Premier; for Sling, President.)

Thousands in use giving entire satisfaction. As shown in the cut, the hay is elevated at the end of the rick high enough to clear it, when by the automatic movement of the pole it is carried along the center of the rick and dropped at any desired point, the pole swinging back to its original position as soon as the hay is discharged.

The Simplest, Cheapest and Most Practical Stacker in Use.

It can be used with any kind of fork, and **MAKES LARGER and BETTER STACKS** than can be made with any other stacker. It works well in windy weather. It can also be used with any kind of **SLING**. It takes the hay from the **SWEEP RAKE, HAY SHOCK, HAY SLIDE OR WAGON**. They are also extensively used for handling Headed Grain and all kinds of forage.

Can be rigged to suit the requirements of any farmer, no matter how large or how small.

Write for special circular, prices and full directions.

Dear Sir.—Goods are all here. Tried Pole stacker, find it all right, better than I expected. Stacked 20 acres of alfalfa in one day.

JACOB MONICE, Guide Rock, Nebr.



Louden's Two-Pole Stacker

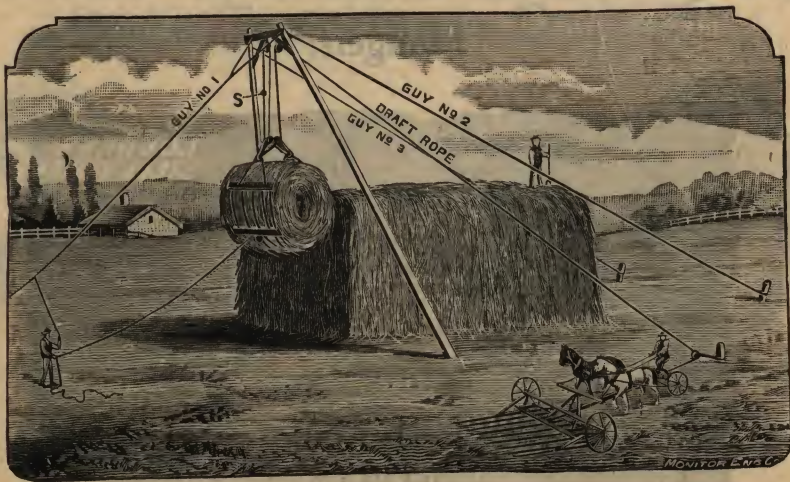


Fig. 340.

The Latest and the Best.

(Fittings for Fork, Partner; for Sling, Pastor.)

IT WILL TAKE A WHOLE SWEEP RAKE LOAD AT ONCE.

This stacker works on substantially the same principle as our Single Pole but in some respects is an improvement on it. In using two poles, the side guys are dispensed with. Lighter and shorter poles can be used to build the same sized stacks, and the poles are good guides in building.

Two rear guys Nos. 2 and 3, are used in place of one and **do not interfere in the least** with the stack, and guy No. 1 never sags down to interfere with the Sweep Rake or Hay Wagon.

Stacks built with our **SINGLE or TWO POLE STACKER** will not "take water, because there are no holes or pockets in them to run the water in, and there is a "back bone" to run the water off.

For ease of operation, simplicity of construction, durability, cheapness and capacity for work, **we challenge the world to produce the equal of either the Single or Two Pole Stacker.**

Write for special circular and prices.

Dear Sirs:—Yours of the 26th of August at hand and I received the Pulley all right. We have the Derrick to stack hay with the slings. It comes nearer stacking hay without work than anything I have ever seen.

WM. C. MAY, Cedar Hill, N. M.



Louden's Flexible Double-Tread Barn Door Hangers.

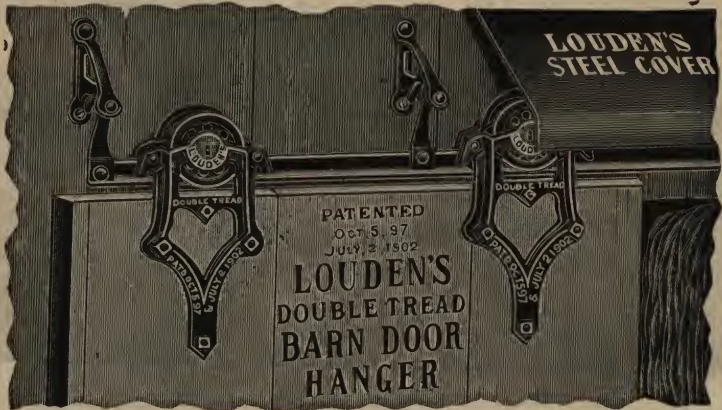


Fig. 458.

This is the Barn Door Hanger that has revolutionized the trade during the last few years. It was the Pioneer Flexible Hanger and it has practically driven all the old style rigid hangers out of the market. A barn door hanger to sell must now be "flexible" or "hinged," or "swing out," or something of that nature. Scores of hangers with this idea in view have lately sprung up, but not one of all these imitations begin to compare with **LOUDEN'S FAMOUS ORIGINAL DOUBLE TREAD HANGER**—without question the **Best on Earth**.

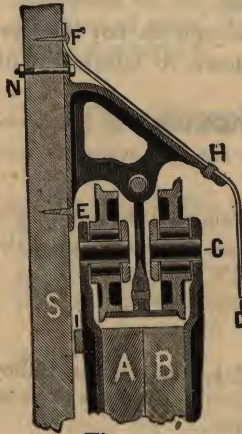


Fig. 453.

It is in reality two sets of Hangers—a set on each side of the door fitted to run on opposite edges of an inverted T-rail, just like a hay carrier. The track is flexibly hung to brackets secured to the wall, and will accommodate itself to the inequalities of the siding. The door can be closely fitted and at the same time will not bind or run hard, on account of the warping of the door or siding, like rigid tracks and hangers do. The track being a T-rail, takes up the least possible room and the hanger frame is thereby shortened and strengthened.

There is an absolute center draft instead of a side hitch, as with ordinary hangers. The door can not jump the track nor be hooked off nor blown off, but will always stay on and run true and easy.



Double Tread Hangers Continued.



Fig. 454.

(Dewey.)



Fig. 554.

The brackets which hold the track, form a solid and continuous support for a cover the whole length of the track so it cannot get loose from the wall. Our Patent Steel Cover can be let into the wall to entirely shut out rain and snow. Front view of this cover is shown at A in Fig. 458 and a sectional view is shown in Fig. 453 (F. H. D.) All Barn Door Tracks should be covered.

There are 4 wheels in place of 2 to carry the weight of the door, and all these wheels are fitted with our improved roller bearings; 10 turned and tempered steel rollers revolve around a turned and tempered steel shaft, as shown Fig. 454. No soft iron rivets or wire is used in these roller bearings or axles and they cost twice as much as those used by manufacturers of other hangers. A revolvable washer is placed on the axle at each end of the rollers to take off the friction against the casing. This makes the easiest turning and most durable roller bearing ever invented. Our patent covers this feature.

Fig. 454 is the original pattern of our Double Tread Hanger, of which there are hundreds of thousands in use. Fig. 554 is our Improved Pattern, which is much stronger and better than the old one, and is the one we now manufacture exclusively.

TRACK FOR DOUBLE TREAD HANGERS.

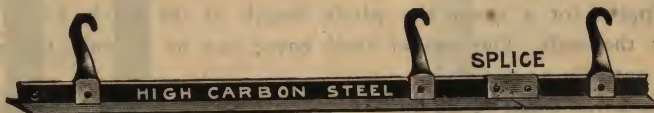


Fig. 452. (Evans.)

The track is a special T-Rail of High Carbon Steel and Carries the largest door. The hooks and brackets are the best malleable iron and stand the roughest usage.

The sections of the track are securely spliced together and cannot come apart, instead of being simply butted together as all other tracks are. Made in 6, 8 and 10 feet lengths.



Latest Improved Giant Double Tread Barn Door Hangers



Fig. 580. (Schley.)



Fig. 581.

.. Fig. 580 is front view and Fig. 581 is end view of Louden's Improved Giant Double Tread Barn Door Hanger. This hanger has all the features of our standard Double Tread, the tempered steel roller bearings, center draft, etc., but instead of bolting on both sides of the door it is made to bolt on one side, making it simple and easy to attach to heavy doors.

There is a heavy strengthening web, A Fig. 581, that fits into a slot cut into the top of the door. This web makes the hanger very strong. There is an absolute center draft, instead of a side hitch as with ordinary hangers. The door cannot be thrown off the track, but will always stay on and run true and easy. Thickness of the door makes no difference with this hanger, and on account of the track being flexibly hung to brackets secured to the wall, the door will accommodate itself to the inequalities of the siding. Can be closely fitted and at the same time will not bind nor run hard on account of warping or walls settling out of shape. The brackets which hold the track form a solid and continuous support for a cover the whole length of the track, so it cannot get loose from the wall. Our patent steel cover can be let into the wall to entirely shut out rain or snow.

The track for Giant Hangers is a special T-Rail of High Carbon Steel, the same as the Standard Double Tread Hanger Track, Fig. 542, but it is heavier. The Giant Hangers and Track are designed and built for heavy warehouse doors. We recommend them for heavy and hard use.

All of our barn door hangers are neatly packed, one set in a paper box—12 boxes in a wooden case. The necessary bolts for attaching the Hangers to door and the rivets for track are placed in the boxes with Hangers.



Louden's Jointed Barn Door Hangers.

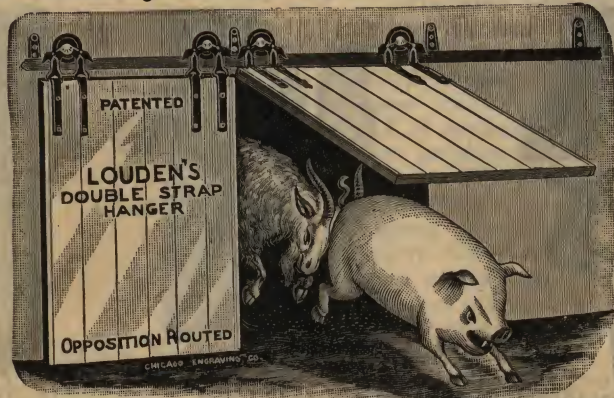


Fig. 480.

Our **Jointed Hangers**—four different styles—which we sell at popular prices are the largest and best line of jointed hangers in the market. Three of these styles are made of **HIGH GRADE MALLEABLE IRON** with metal where it will make the Hanger the strongest, neatest and best. The other is made from high carbon, stiff steel. We use no soft steel that will easily bend in making these hangers.

Their construction gives the door more **flexibility** at the top than any other jointed hangers and while they are built to hold the door close to the side of the barn, an uneven wall does not make them run hard as others.

DOUBLE STRAP JOINTED HANGER.

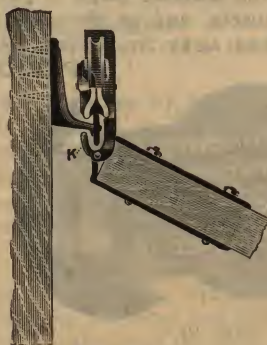


Fig. 483.

Fig. 566 is a detached view of our **Double Strap Jointed Hanger**, with Malleable hood. Fig. 483 is an end view with door swung out.

The **double Strap** with four bolts makes it much stronger and more durable than hangers having a single strap and two bolts only. Having the hanger frame made wide with a bearing on each end, holds the hanger rigid endwise of the door or track and does away with the end play found in hangers with a single bearing directly under the center of the wheel.



Standard and Royal Jointed Hangers.



Fig. 567. (Shamrock.)



Fig. 485.



Fig. 568. (Yacht.)

Fig. 567 is a detached view of our **Standard Jointed Hanger** with Malleable Hood, and Fig. 485 is an end view showing patent strengthening web. It will work on any thickness of door, is easily attached and cannot, by any possibility get off the track.

Fig. 568 is a detached view of the **ROYAL JOINTED HANGER**, with Malleable Hood. The Royal is one of the latest and best Flexible Door Hangers made. The strap which connects door to upper frame is made **U-Shaped**, and has its upper ends re-curved to pass through loops, and to embrace the opposite side of door.

The Double Strap, Fig. 566, the Standard, Fig. 567, and Royal, Fig. 568, all have Tempered Steel Roller Bearings and patent Track Clearers, which will throw birds' nests and other obstructions off the track. The joints are directly below the **Outside Edge** of wheel, which causes the door to hug the side of the barn closely, and at the same time it gives the door the greatest freedom to be pushed away from the wall when necessary.

SUPERIOR ROLLER BEARINGS.



Fig. 19.

Our **ROLLER BEARINGS** are of the finest steel, turned perfectly true and tempered. Ten of them in each wheel revolve around a **TEMPERED STEEL AXLE**. On each end of this axle, as is shown in Fig. 19, is a **REVOLVING** washer which prevents the friction which would be produced by the ends of the rollers rubbing against the casting, thus making the hanger run easy. Our patents cover this feature.

The axles on which our bearings run are made of Turned and Tempered Steel, with shouldered ends to fit in the casing (see Fig. 18).



Fig. 18.

These give our Door Hangers the finest roller bearings on the market and no other can compare with it for light running.



Steel King Jointed Hanger.



Fig. 559. (Lipton.) Fig. 560.

It has a triangular shaped loop which supports the door strap at the corners instead of in the middle, thus adding to its strength. It has a **wide semi-circular bearing**, which takes up the least amount of space below the track, and permits the lower hook to be **made wide** so as to afford the largest amount of oscillation on the track. While it has the largest amount of freedom of movement it is an **absolute "stay on"** and cannot get off the track or bind thereon. Packed one set in a box, with bolts, and a dozen of these boxes are packed in a crate.

The **Steel King** is the latest and best of its class. It is the best proportioned and the most symmetrical in appearance. The casing **forms a cover** for the wheel and the points C C in conjunction with the opposite side serve as **Track Clearer** to prevent obstructions on the track from getting under the wheel. It is **roller bearing** and the axle on which the rollers run is arranged so it cannot turn in the casing and wear it out as some others do. There is an **oil hole** immediately above the axle for oiling the bearings.

LOUDEN'S TRACK FOR SINGLE TREAD JOINTED HANGERS.



Fig. 487. (Marble.)

Fig 487 is the track used for **Louden's Jointed Hangers**. It is made of the best High Carbon Steel 3-16x1¼ inches and will stand twice the strain of ordinary Barn Door Track.

The ends of the sections are **securely spliced together** by a malleable iron splice riveted into the ends and it is impossible for them to become separated as other tracks do that are simply butted together. This splice is riveted to one end of each section before leaving our factory and the other end punched so the connection is easily and quickly made. This makes one solid rail of the whole track, no matter how many pieces have been used, and makes a **continuous even tread** for the hanger.

LOUDEN'S SPLICE



COMMON SPLICE



Fig. 22.

We use a **Refined Malleable Iron** bracket, mortised through the track and riveted on by hand—no machine work. These brackets have a heavy flange on each side and a brace below to hold the track in place.

This adds materially to the stiffness of the track and gives it great strength. Made in 6, 8 and 10 feet lengths.

All other tracks have the ends of the sections simply butted together without riveting, and the cupping of the siding or other inequalities of the wall are liable to cause the ends to fall apart as shown in Fig. 22.



Louden's Sliding Door Latch.

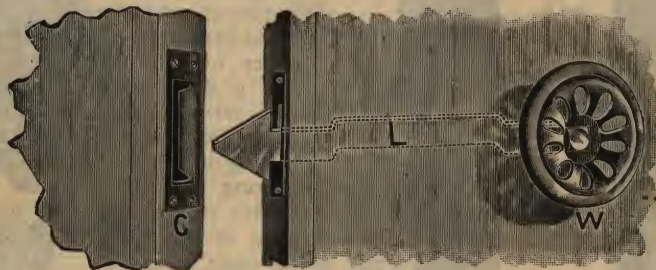


Fig. 455. (Manilla.)

The latch is lifted and the door opened and closed by the hand wheel *W*, which is generally placed on the outside, while the central part (dotted lines *L*) is bent to form a hand hold on the inside. The catch *C* has flaring edges to guide the latch into it. It is reversible and may be used for right or left hand doors. Made of Malleable iron, is strong and durable and can be used on double or single doors.

LOUDEN'S STAY ROLLERS.

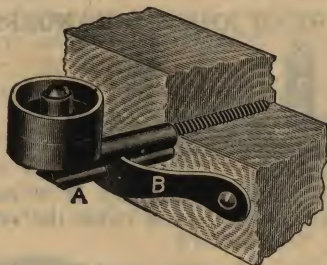


Fig. 456 (Cuba.)

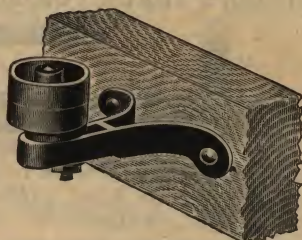


Fig. 457. (Havana.)

Fig. 456. This roller is screwed into the wall to suit the thickness of the door; and then the brace *B* is slipped over the rib *A* and fastened to the wall by screws or nails. This prevents it from turning and getting the roller out of place.

Fig. 457. This roller can be adjusted to the thickness of any door, either before or after fastening to the building, by setting one nut.



Fig. 445. (Hayti.)

LOUDEN'S MALLEABLE D HEAD.

Fig. 445 shows our Malleable D Head for spades, shovels, fodder forks, furnace pokers with pipe handles, etc. This is the only D Head in the market with a split socket made long enough for two rivets through the handle. It will adjust to fit any handle full size and can be riveted tight should it work loose. Indestructible as it is one piece of Malleable Iron.



Louden's Stake Holders.

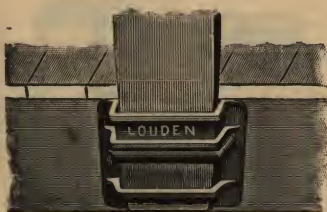


Fig. 398. (Santiago.)



Fig. 398 1/2. (Tampa.)

Made of Malleable Iron and tapering with rounded edges so stake cannot get loose and wear a notch in it. A clip bolt (which we furnish), is used to hold figure 398 in place. Common bolts are used with 398 1/2. Experienced draymen pronounce them the best in the market.



Fig. 624. (Bahama.)

Pressed Steel Stake Holder



Fig. 627. (Beach.)

Fig. 624 is designed to bolt on to the ends of the cross timbers of the hay rack, so that the side stakes of the box, crate, or basket of the rack (as it is variously called) will fit therein at the ends of the timbers, as shown in cut. It is made of steel two and a half inches wide and 1/8 inch thick, and will securely hold a 2x4 or 2x3 inch stake, having its lower end made tapering.

Fig. 627 is our Pressed Steel Stake Holder for Drays, Wood Racks, etc. Made from steel three inches wide, 1/8 inch thick. The recess for stake is 1 1/2 x 3 inches with a slightly flaring top that prevents wearing a notch in the stake, and tapering toward the lower end to hold it securely and keep it from slipping through. It is a fine design and made to use in the place of our regular Malleable Stake Holder, where a cheaper one is desired.



Fig. 625. (Smyrna.)

Fig. 625 is our Rounded Malleable Stake Holder made to hold a stake 1 3/4 x 2 1/4 inches.

Fig. 626 is also a Rounded Malleable Stake Holder with dimensions of 1 1/2 x 3 1/2 inches.



Fig. 626 (Palm.)



Louden's Combination Rack Irons.

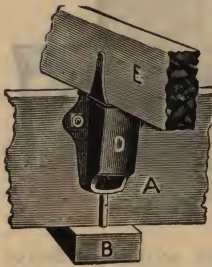


Fig. 593.

(Fox.)



Fig. 594

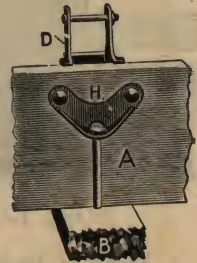


Fig. 595.

For Making Hay Racks, Hog Racks and Wood Racks.

These are the most practical and best combination Rack Irons in market. The irons D are regular stake holders bolted to the side rails A and provided with lugs or ears at their upper ends between which the cross timber E of the hay rack is held by a bolt passing through said lugs, as shown in Fig. 593.

In changing to a hog or wood rack the cross timber E is removed and the stake C is inserted in the holder, and may be bolted therein if desired, as shown by Fig. 594. The stake is set edgeways, which makes it much stronger than if it were set sideways. The bottom pieces B are held in place by two bolts, one of which passes on each side of the side rail A. Figs. 593 and 594 show the outside bolt passed through the bottom of the holder D, and the bottom piece B, and Fig. 595 shows the inside bolt connected to the inside iron H, which is held in place by the bolts, which pass through the holder D. This holds the side rail A firmly in position and prevents spreading.

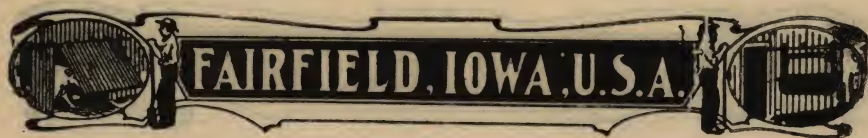
The castings D and H are of the best malleable iron. A set securely packed in a box consists of 8 holders D, 8 inside irons H and 40 bolts, all $\frac{3}{8}$ diameter. They are packed with bolts for 8-inch side rails. The lower outside bolts are $5\frac{1}{2}$ and the lower inside bolts are 7 inches long. For 6-inch side rails change these bolts for ones two inches shorter, and for 10-inch side rails, two inches longer.

HAY RACK SLING HOLDER.



Fig. 556. (Holder.)

The prongs of the Holder (casting 296) are made to fit the outside eyes of the end rings of the sling, and are set at an angle so they will slip off readily in elevating. They are bolted to cross-pieces at different heights on the ends of the rack, and the slings are hung upon them before loading. They save pulling up the ends of the slings in hooking on the pulleys. Six holders are required to a rack when three slings are used.



Louden's Hay Rack Clamps.

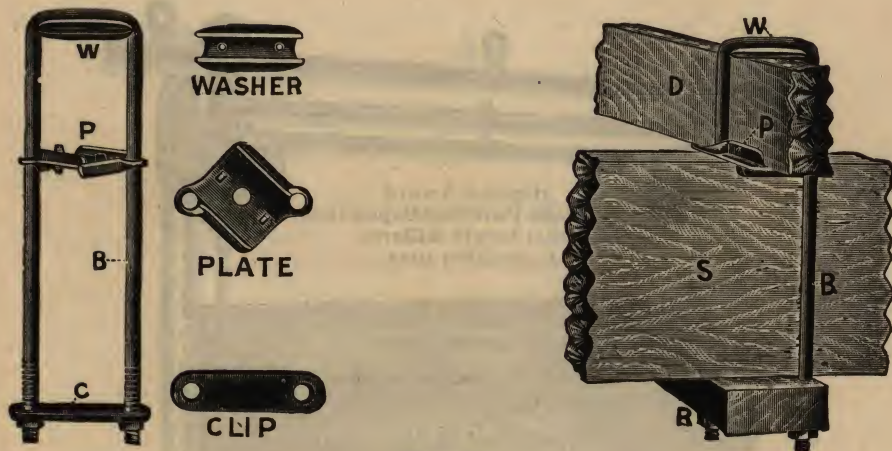


Fig. 555.

$\frac{3}{8}$ x12 (Fold); $\frac{3}{8}$ x14 (Finger); $\frac{3}{8}$ x16 (Fang); $\frac{3}{8}$ x18 (Fair)
 7-16x12 (Ford); 7-16x14 (Fixture); 7-16x16 (Firm); 7-16x18 (Full)

One set complete packed in a strong wooden box.

By means of these **Clamps** the timbers of the rack are put together and **securely** held in **position** without having to bore holes in the sills or upper Cross-pieces. The boring of these holes greatly weakens the timber, and it takes considerable time and labor to do the work, all of which is saved by the use of our **Clamps** and **Plates**, and a much better rack is thereby produced.

The bearing plates are fitted with flanges above and below and also studs above and below which prevent the timbers from slipping on each other.

Our **Intermediate Plates** are of the best malleable iron. Our **Top Washers** (also of malleable) have double the bearing surface of the common channel iron washers in market, and they are made to fit the bolts. Our **Clip Plates** are of good solid steel with neatly rounded ends. With these clamps, the rack can be made any desired way to suit the requirements of users.

A set of these **Clamps** consists of 8 Top Washers W; 8 Intermediate Plates P; 8 Lower Clip Plates C, and 8 U-Shaped Clamp Bolts B, which are made in different sizes to suit different sized timbers. The 14-inch bolts are for 2x4 upper cross-pieces and 2x8 sills; the 16-inch bolts, for 2x4 cross-pieces and 2x10 sills, or 2x6 cross-pieces and 2x8 sills, and the 18-inch bolts are for 2x6 cross-pieces and 2x10 sills. We make these bolts of two sizes— $\frac{3}{8}$ and 7-16, but recommend the former, except for extra heavy work.



Louden's Standard Litter Carrier.



Fig. 720. (Merckens.)

This is beyond question the most reliable Litter or Manure Carrier made. It will do the most work and do it the easiest.

Our **New Worm Gear** makes it complete. See detailed view, Fig. 722, page 69. One pound on the chain will lift 40 pounds in the box. A boy can hoist half a ton easily. The loaded box will stay where you place it and cannot drop down and smash. There is no troublesome ratchet or brake. You pull the chain one way to raise it and the other way to let it down. The gear is made so as to **relieve the friction** and make it run easy.

The box is constructed of **heavy galvanized sheet steel**, reinforced at the top and ends by **angle iron**—the whole being securely riveted and soldered together, making it **water tight** and very substantial. It is latched to the hangers at both ends instead of one. The latches are connected together and release **simultaneously** to let the box tip and discharge its contents. It can be easily and quickly righted with a fork or shovel **without touching with the hands**.

The box is made in two sizes—42 and 48 inches long—each being 24 inches wide and 22 inches deep. The shorter length is recommended for cow barns or where heavy material is to be handled.



Standard Litter Carrier Discharged.



Your Carriers are practically perfect in every respect, and are just the thing required.—
Orrin Kipp, St. Paul, Minn.

Fig. 742.

The Truck Frame is of **tubular steel and malleable iron**, bolted together, which makes it not only strong and durable, but neat in appearance.

Special flexible wire cables are used to wind on the hoisting drums, and the hoisting chain and wheel are the best that can be made. It can be quickly, easily and safely raised and lowered, and is the Simplest and Most Durable Hoisting Gear Made.

The trucks are Swiveled to run on the shortest curves, the wheels having **special flanges** which prevent kinking on the track. The axles for the wheels are of the best $\frac{7}{8}$ -inch tempered steel, bolted into sockets full size, insuring full strength and no weak shoulders. They are especially designed to run on the **Louden Single and Double Beaded Steel Tracks**, which are the best for Curves and Switches. We also make Trucks with **Larger Wheels** for our Senior Track and recommend this for heavy work. With these larger wheels, the **Senior Track Hangers** are required (See page 50). The Standard size will raise and lower a little over 4 feet, which is sufficient in nearly all cases. Special gears with sprocket chain hoist in place of cable will be made to order when required. (See Fig. 800, Page 68). We also make them not to raise and lower when so desired.



High Lift Chain Elevator.



Fig. 800. (High)

Fig. 800 shows our **High Lift Chain Elevator**, by which our Standard Litter Carrier or other receptacle may be raised and lowered any reasonable distance desired.

The regular sized elevator is fitted with chains to raise and lower the receptacle seven (7) feet. When it is desired to raise or lower the receptacle **greater distances** we will furnish chains the proper length necessary at a small additional cost.

Chains are used for elevating and the hoisting drums are provided with **Sprocket** to fit the chains. A pipe or hollow cylinder "A" is mounted upon the pipe which connects the trucks together and is rotated thereon by means of a screw "S". The chains are attached to the opposite ends of the cylinder A and as the receptacle is elevated, they are wound thereon, so as to take up the slack as shown.

Guides "B" are used to insure the even winding of the chains on the cylinder. As the receptacle is lowered the chains unwind on the cylinder, the guides "BB" following back and forth as the chains are wound or unwound.

Our High Lift Chain Elevator makes this Overhead Carrier very desirable, where material is to be elevated from one floor to another, in the same building, and carried to some remote part of that floor. It will also be found desirable for use in stone quarries, digging ditches and other places where it is necessary to handle heavy material, to lift the load quite a distance and then carry it to one side, to be loaded on a wagon or dumped in a pile. Write for additional information.



Louden's Standard Litter Carrier.

DETAIL VIEWS

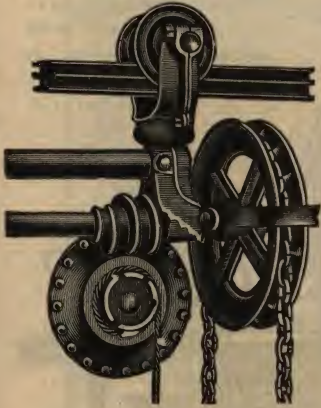


Fig. 722.

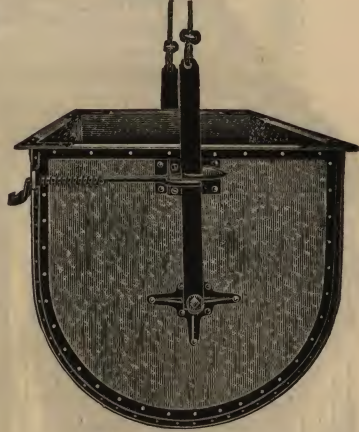


Fig. 723.

Fig. 722 is a detail view of the **Worm Hoisting Gear**, the front part of the bracket being broken away and the front side of the **Pin Wheel** being removed to show the working of the gear. It is so simple and practicable that a detailed description seems unnecessary. It is the most perfect Hoisting Gear in existence.

Fig. 723 is an end view of the box, showing its great strength and symmetry. It is made of **heavy Galvanized Iron**, having the upper edges and corners reinforced by **Angle Iron**, the whole being securely riveted together and soldered to make it water tight. It also shows the catch or trip that holds the box in position when loaded.

The Best Outfit to Buy.

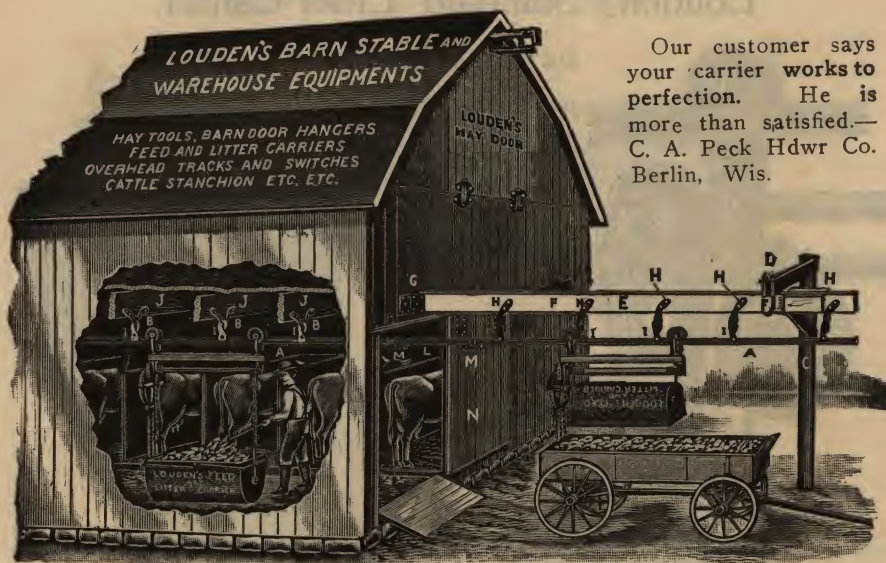
It is now a settled fact that the **Overhead Carrier system** is the only practical way of handling feed, litter, manure, and so on, in barns, stables, dairies, etc. The **Overhead system** has also gained great favor for handling merchandise and material of different kinds in stores, factories and mills; for loading and unloading cars and vessels of coal, for handling cinders, and, in fact, in handling any kind of material, be it heavy or light.

The important question now is what kind or style of **Overhead System** to get. As these pages show we have perfected our system of solid steel track or cable track, and the kind to use depends upon the conditions and surroundings. We have made a special study of this work and are always pleased to give estimates and advice as to the best system to use to those who furnish us with sketches and full information of where and how, and the purpose for which they wish to use the **Overhead System**.

We solicit your correspondence, and will gladly furnish you all the information we can.



Carrier at Work in Barn.



Our customer says
your carrier works to
perfection. He is
more than satisfied.—
C. A. Peck Hdwr Co.
Berlin, Wis.

Fig. 599.

Fig. 599 represents the arrangements of our Feed and Litter Carrier as used in an ordinary barn. The track is suspended back of the stalls in the stable to the joist "J" by the track hangers "I" and brackets "B" and is run out of the door into the yard by supporting a ridge pole "E" by the posts C and cross arms "D". On this ridge pole our ridge pole brackets "H" are used in connection with the track hangers "I". They are made for timbers 2 inches thick. The track can be carried as far out as desired and be curved to run to any part of the yard by making the supports in short sections or running extra pieces of timber across the corners where the track turns.

Two sets of posts with cross bars from the top of one to the top of the other can be used if preferred. As a rule it is better to make the cross arms D, 2x4, and the ridge pole E, 2x8. The ridge pole "E" can be fastened to the arms "D" by common bolts, but it is much better to use our Hay Rack Clamp F (Fig. 555, page 65). By using these clamps the timbers are not weakened by boring holes through them and considerable labor is saved.

The section of track next the barn is easily made removable (See Fig. 633, Page 73), so that a load of hay can be driven through at the end of the barn.

The carrier can also be arranged to transfer to a Self-Returning Wire Track to run a distance from the barn.



The Track Bracketed to Barn.

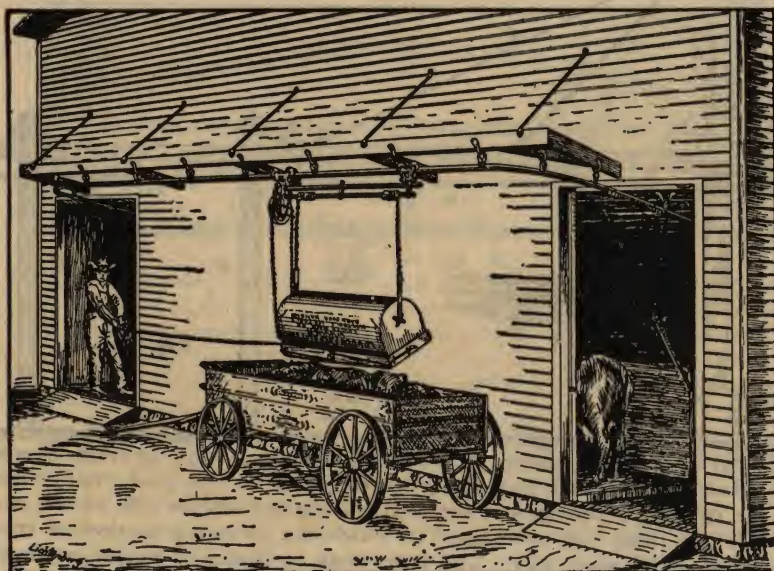


Fig. 703.

In place of the posts out in the yard the track may be bracketed to the end of the barn far enough out to drop the manure on the wagon, as shown in Fig. 703. In this way the track may be run from one door into the other, and no switch will be needed. The track should be hung $3\frac{1}{2}$ or 4 feet from the barn.

Just the thing to load Manure Spreader

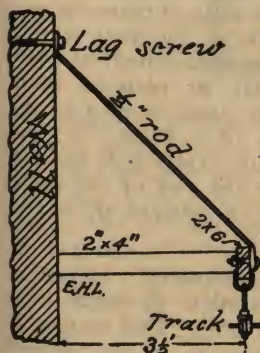


Fig. 704.

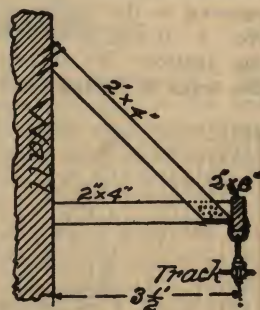


Fig. 705.

Fig. 704 is a sectional view of a bracket which is supported by half-inch rods lag-screwed to the barn. The stringer to which the track is hung is 2x6 and the braces 2x4. Fig. 705 is the same supported by a 2x4 timber spiked to the barn in place of the rod in Fig. 704.



Swinging Track.

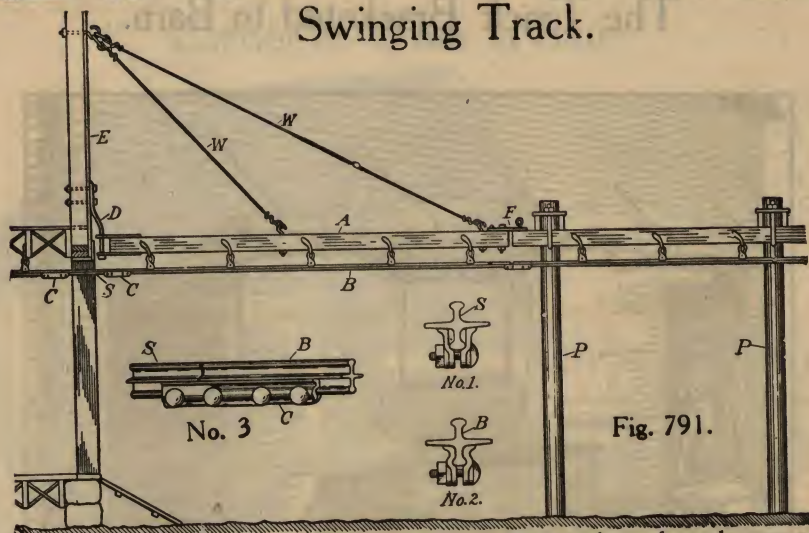


Fig. 791.

Fig. 791 is a side elevation showing a swinging section of track connected with the track in the barn and also with track out in the yard, thus providing means for opening a passageway for teams along the end or side of the barn.

"A" is the ridge pole or timber to which the swinging section of track B is supported in the usual way. The ridge pole or timber is hinged at its inner end by an iron D bolted to the wall E and is supported by two or more rods "W" secured to the wall as shown. Posts with brackets for supporting the track out in the yard are represented by "P. P." "S" is a short removable section of track which is used to connect the swinging section "B" to the track in the barn. It is held in place by two special clamps C more plainly shown by the enlarged drawing, view No. 3. The ends of the clamps, holding the removable section "S," are shown in cross section No. 1. The ends of these clamps, secured to the track "B" and the track in the barn are shown by cross section No. 2. It will be seen that the short removable section can be easily lifted out when the section "B" is swung around to either right or left, or replaced when the track is swung back into working position. A similar clamp is used at the outer end of section "B." Plates "F" are bolted to the sides of the ridge pole secured to the posts so that the end of the ridge pole "A" can be placed between them and held in place by a pin.

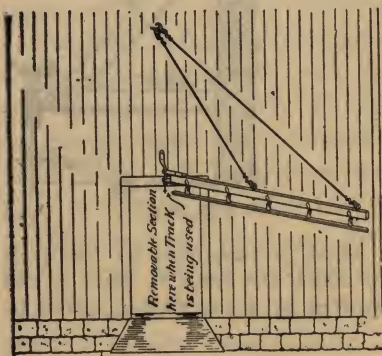


Fig. 792

Fig. 792 is three-quarter elevation, showing swinging section of track connected with the barn only. This section is used when the manure is to be dumped a short distance from the barn or when it is found desirable to run it outside to dump in manure spreader or wagon. This swinging section can be made 40 feet or longer, but shorter sections are recommended.



TRACK SECTION TO RAISE AND LOWER

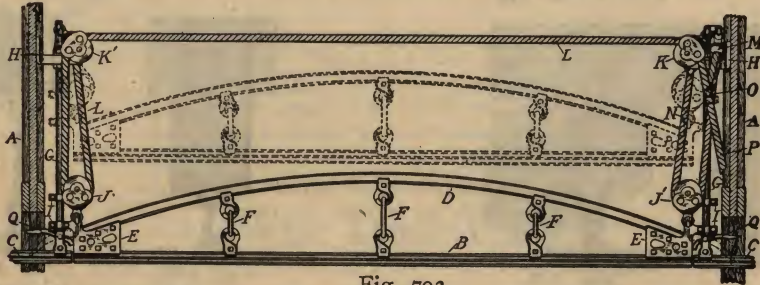


Fig. 793

Fig. 793 represents a section of track to raise so a wagon or other device may pass below, and then be lowered to position of the connecting tracks.

It is sometimes necessary to run track across driveway or alley where it would interfere with passage way. By means of the pulleys and ropes shown in the cut the trussed section of track can be easily lifted up out of the way and then allowed to drop back into position.

When this section of track is elevated as shown by the dotted lines, the safety stops "Q" drop down and guard the open ends of the track to prevent the carrier from running off. When the section comes back to place, the guards are automatically elevated, permitting the carrier to pass through.

By making the rods "G" the proper length, the track may be raised to any desired height. It can be held in the elevated position by tying the loose end of the rope or otherwise.

REMOVABLE SECTIONS, ETC.

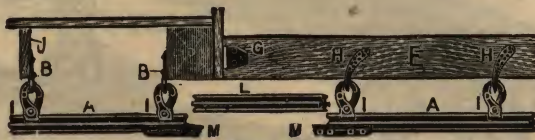


Fig 633. (Craft)

Where the track passes through a door, a removable section "L" Fig. 633, is used. This is furnished with special splice clamps that bolt to the ends of the adjoining track sections, "MM." These clamps hold the loose piece firmly in place, but it can be easily lifted out to allow the door to shut or be replaced when the Carrier is to be used. When Single Bead Track is used the special splice clamps bolt to the ends of the removable section.

J is a joist; B, the brackets; I, the hangers; A, the track; E, the ridge pole; H, ridge pole brackets, and G, a wall bracket to fasten ridge pole to barn.

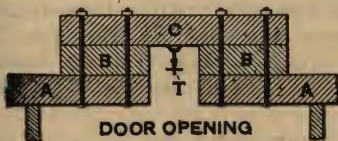


Fig. 643.

With sliding door, a removable section of door hanger track is required. Our Double Tread Door Hanger is fitted with a Hinged Section for this purpose.



Hanging Track Under Beams.

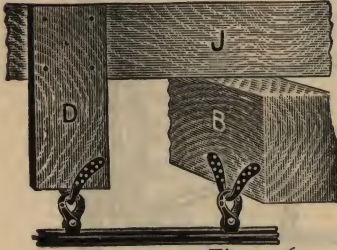


Fig. 576



Fig. 577



Fig. 578

In hanging a track to joists it is sometimes necessary to run under beams B. To do so the preferable way is to use a link hanger (Fig 803 Page 50) and a rafter hook as shown in Fig. 578. When the track runs lengthwise with the joist a ridge pole bracket may be used instead of the hook and when crosswise to the joist a common rafter bracket may be used. Another way is to nail a two-inch piece D to the Joist so that it will extend down even with the lower edge of the beam as shown in Figs. 576 and 577.

LOUDEN'S OVERHEAD SWITCH.

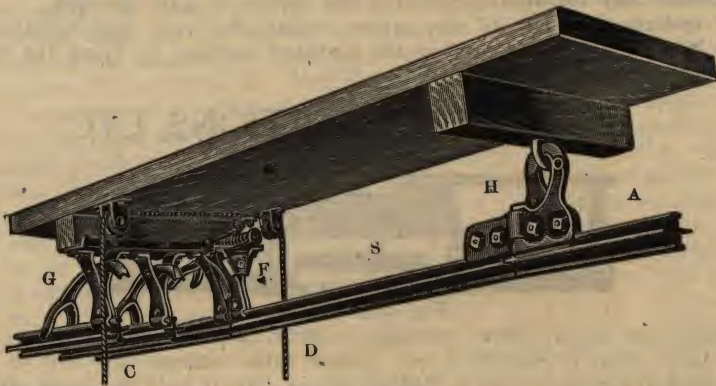


Fig. 795 (Caboose.)

Fig. 795 shows a three way track switch mounted on plank "B" ready to attach to the joist or ceiling of building. The switch "S" is hinged to the main track A at H. By pulling on the cords C and D the switch or hinged section will slide on the plate "E" and change from one track to the other, so that the operator can use either one of the three tracks at will. The hinged track "S" is locked in place by latch "F." We make this switch for either our single or double beaded track, and it can be fitted with either two or three tracks. This switch can be operated from below no matter how high the track may be hung. A guard "G" is used to prevent carrier from running off track, should switch be left open. As many tracks or switches as are necessary can be used and the track can be run to any part of barn.

We furnish these switches either mounted or unmounted, but we advise our customers to purchase mounted switch.



FAIRFIELD, IOWA, U.S.A.

Curved Track.

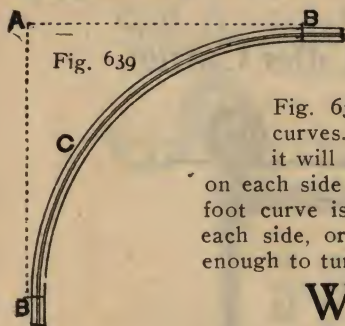


Fig. 639

Fig. 639 is a diagram for measuring a track around curves. Where a 6-foot Right Angle Curve C is used, it will make up for approximately 4 feet of straight track on each side from A to B, or about 8 feet in all. When an 8-foot curve is used, it will make up approximately 5 feet on each side, or 10 feet in all. Generally a 6-foot curve is long enough to turn a square corner.

Wire Track Transfer.

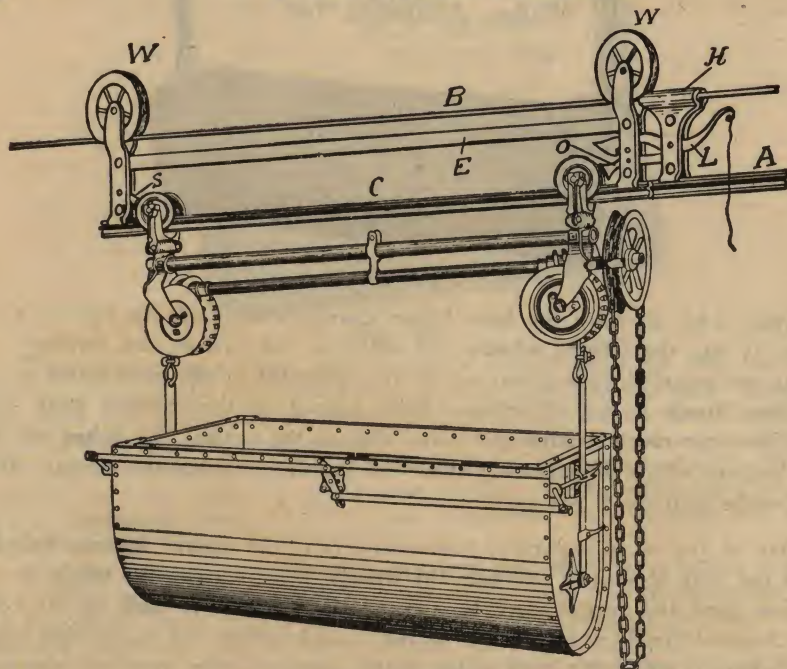


Fig. 799. (Trump.)

Fig. 799 is a representation of our Wire Track Transfer by means of which our Standard Litter Carrier may be transferred from our solid steel track "A," extending out from the barn, and be made to run on the wire track "B." It is simply a truck having wheels W to run on the Wire Track and also a steel track section "C" onto which the carrier may be run from the track "A," a stop "S" being used to prevent the carrier from running off the section. A latch "L" is used to hold the section C and track A together, and when unlatched the truck will run back and forth on the wire track in the usual manner. The advantages of this transfer are that it does not require posts out in the yard and the carrier may be arranged to return the same as our Self Acting Carrier.



Louden's Self-Acting Litter Carrier.



Fig. 721 (Hymn)

This is by all odds the best Litter Carrier ever made to run on a wire track. It has the largest wheels and will run the easiest and farthest. The wheels are mounted upon yokes which are swiveled in the main frame so they will turn freely in any direction. Being placed on the extreme ends of the frame they run much steadier and better than in the center. The yokes are fitted with keepers which effectually prevent stock from hooking the carrier off the track while hanging in the yard.

One of the most important improvements is our patent Spring End Stop which not only absolutely prevents the wheels from jumping the track, no matter how hard the carrier may be run, but also starts it back on its return trip. A good steady shove will send the loaded carrier out a hundred feet or more, where it will dump itself at the proper place and then return to the stable of its own momentum without danger of getting off the track. No wire track carrier is complete without this stop.

The Trip Stop is Adjustable and can be moved along the track to any desired point for dumping by pushing it along with a fork or stick and is fastened there without climbing to the track. Being semi-circular in shape and secured to the track at both ends, so as to fit the groove of the wheels, it cannot get out of position or fail to trip the box. The catch on the box is double acting as well as positive and cannot fail to work in either direction. When tripped it stays tripped until the box has time to dump and until it is set for another load. The box can be righted with a fork or shovel and without touching it with the hands



Self-Acting Litter Carrier Discharged.

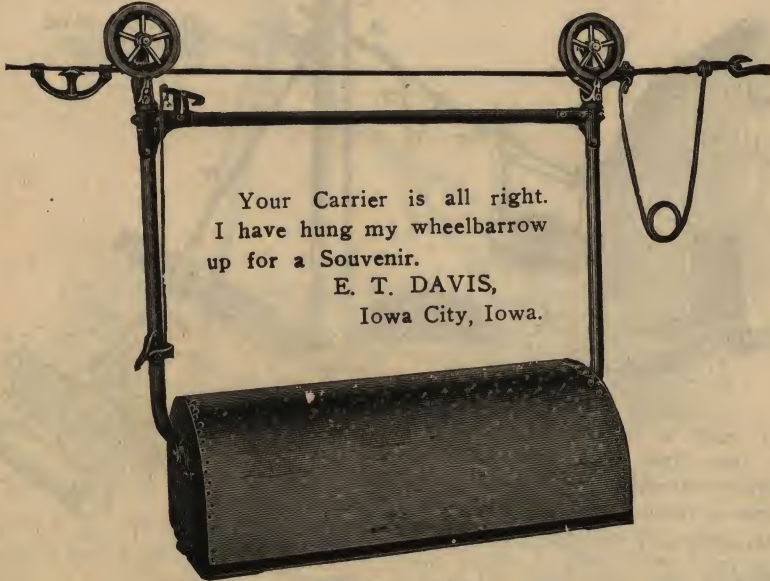


Fig. 743.

The wheels have deep, wide grooves turned perfectly true with small grooves in the middle to fit the wire, and always run free and easy. Being swiveled, they will readily run on short curves, and the Switches can be made short so as to work in narrow alleys where other track carriers cannot be used at all. There are no hoods or square corners over the wheels as other carriers have to catch on cross tracks or under door frames. The wheel axles are made of $\frac{3}{4}$ -inch Tempered Steel, fitted full size in Sockets, thus insuring full strength and no weak shoulders.

.. The frame is solidly constructed of heavy inch pipe held together at the ends by a double set of malleable iron corner clamps which form substantial sockets for the swivel yokes which carry the wheels. The hangers are made in three different lengths to suit height of ceiling. The standard length is 3 feet from track or pivots of the box. The other lengths are $3\frac{1}{2}$ and 4 feet, and are made only to order. The box is made in two sizes, 42 and 48 inches long—each being 22 inches wide and 16 inches deep. The construction of the box is the best. The ends are of seasoned wood, the sides and bottom of high grade galvanized iron, reinforced by strong angle iron at the upper edges.

The general design and mechanical construction of our Self-Acting Litter Carrier is the very best. It is entirely automatic in all its operations and will return to starting point as soon as its load is discharged. It is the only Wire Track Carrier that will run on a three-way switch and around curves. (See Fig. 748, page 80 and Figs. 797 and 798, page 81). It is neat and light, yet strong and durable. It is artistically finished and is warranted superior to any other wire track carrier in market.



LOUDEN'S SELF-RETURNING WIRE TRACK.

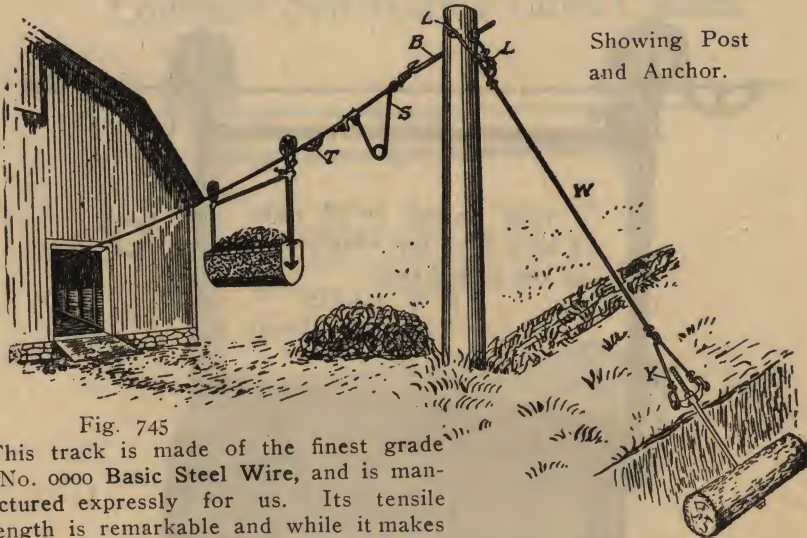


Fig. 745

This track is made of the finest grade of No. 0000 Basic Steel Wire, and is manufactured expressly for us. Its tensile strength is remarkable and while it makes a good spring, it will bend double twice without breaking. It can be run 100 feet or more with only a single post, as shown in Fig 745, and if properly anchored, it will carry twice as much as will ever be required.



Fig. 746 (Horizon).

When longer lengths are required additional posts may be used by means of our **Patent Spring Suspender**, as shown in Fig. 746, which supports the wire and permits the carrier to run past the post. The body of the suspender is of inch pipe fitted with a strong spring nearly a foot long which supports the track and at the same time makes it flexible to suit the weight of the load and to let the carrier run easily over it.

A similar suspender made shorter may be used in connection with a small block and tackle as shown by Fig. 747 to raise and lower the track in the stable as may be desirable, and to assist the loaded carrier to run out and the empty

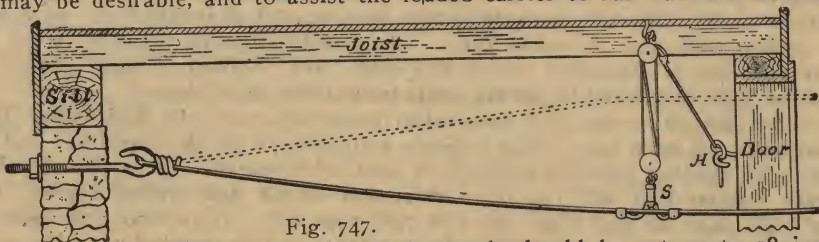
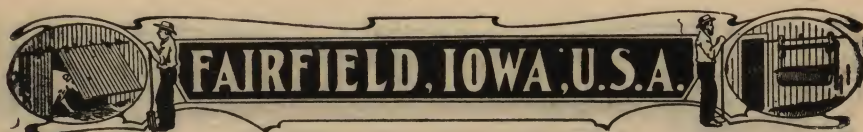


Fig. 747.

carrier to return. The outer end of the track should be set 15 to 18 inches higher by the level than the end in the barn for each 100 feet long. The cut shows the tension bolt passed through the wall below the sill to facilitate the raising and lowering of the track. Otherwise it should be passed through the sill.



Louden's Wire Track Anchors.

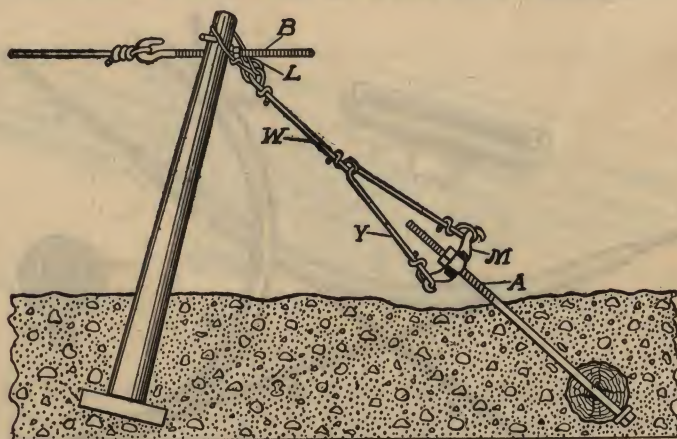


Fig. 751. (Hold.)

The anchoring of the track is an Important Matter. If it is securely anchored it is surprising what loads it will carry, but if not securely anchored, it will sag and get out of shape and cannot do good work. **The post must be securely set in the ground.** The other end of the track will most probably be anchored to the sill of the barn and the post should be **made as solid as the sill.**

The first thing is to place a large flat stone or a good broad plank below the end of the post. Unless the ground is as solid as a rock it will not stand the pressure of the post and it will **settle, and keep settling** every time the track is tightened. The next thing is to place a log or timber 8 to 10 inches, or more, in diameter and 5 to 6 feet long, not less than **4 feet in the ground.** Our anchor bolts are $\frac{3}{4}$ -inch diameter by 6 feet long. They will stand a strain of at least 8 to 10 tons, and the log should be solid enough to stand that also.

Our anchoring device has no equal. It reaches clear to the top of the post, a heavy cross pin being used to prevent the loop "L" from slipping down on the tension bolt B (See Fig. 751). The anchor bolt, which goes through the log, has a long threaded end above the ground (not below where it is of no use) and is arranged with a yoke "Y," so the anchor can be tightened as **may be necessary** to hold the post in proper position. We can use both the tension bolt and the anchor bolt to tighten up the track, whereas others can use the tension only.

Another thing, is to set the post,, **slanting**, as shown in Fig. 751. If set straight it will be much harder on the anchor wire than on the track wire. It is the anchor wire which generally gives way. If there is room, the longer the guy wires are the better. Also be sure the anchor wire is in direct line sidewise with the track wire.



LOUDEN'S WIRE TRACK SWITCHES, ETC.

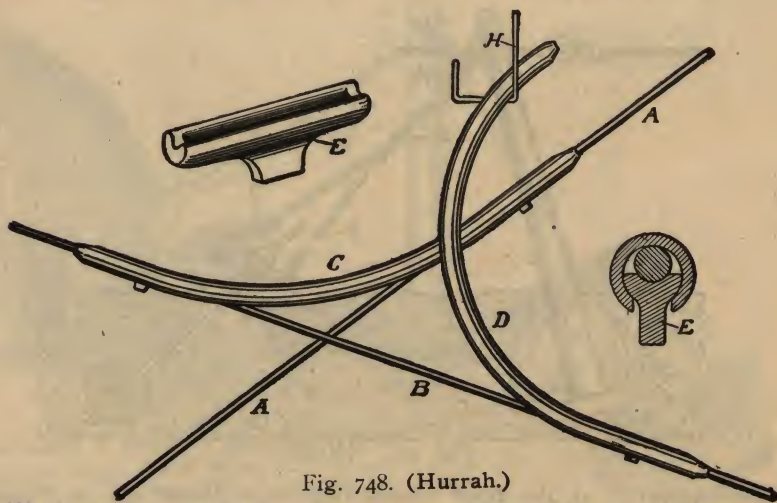


Fig. 748. (Hurrah.)

We have the most perfect Switches ever devised for a wire track. They are made of pipe (C and D) slotted on the lower side to fit over the wire and are held securely in place by specially fitted keys E, which are readily driven in or out **without kinking** or otherwise injuring the wire. The switches can be easily and quickly placed or removed and will run in both directions so as to form a **Three-Way Switch**.

When the switch C is in use the adjacent end of the switch D is held up out of the way by a hook or loop H, and vice versa. To run the carrier on the main track A under the cross track B, the adjoining ends of the Switches C and D are both held up out of the way by the hook H. The sag of the main track A will easily let the carrier wheels pass under the cross track B, but where the switches are used something is needed to hold the tracks together.

This we accomplish by means of the **Cross Track Holder**, shown in Fig. 749. It is hooked on the wire B so the point P will pass under the wire A and then over the wire B on the opposite side. It is held in place by pressing the hook C up over the wire A.

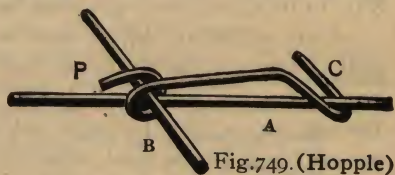


Fig. 749. (Hopple)

Some times it is necessary to run one end of the track to one side of a straight line. This we do by means of our **Angle Iron**, as shown in Fig. 750. The curved end of the iron has a groove in which the wire fits and the other end is held by a guy secured to a post or otherwise, so as to hold the track in proper position. The guy should be of sufficient length to freely raise and lower with the track. The carrier wheels will readily pass over the curved end of the iron.

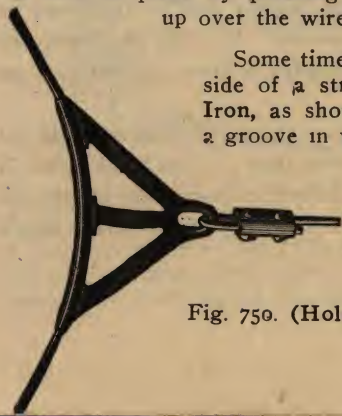


Fig. 750. (Holster.)



Louden's Wire Track Reverse Curve.

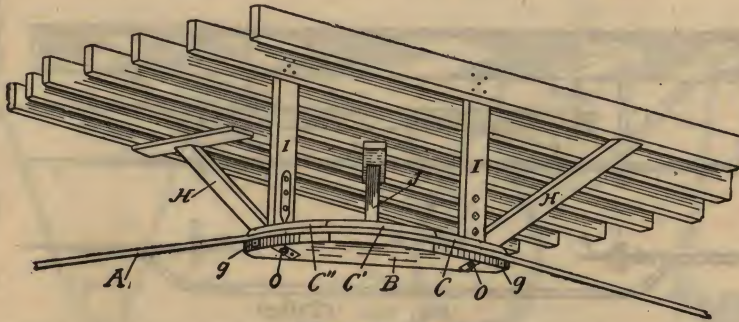


Fig. 797. (Tense.)

By the use of our reverse curves and switches, the Self-Acting Litter Carrier may be run around either inside or outside curves. Fig. 797 shows our reverse curve as it appears when used inside a building, where it is attached to and supported by the joist or ceiling.

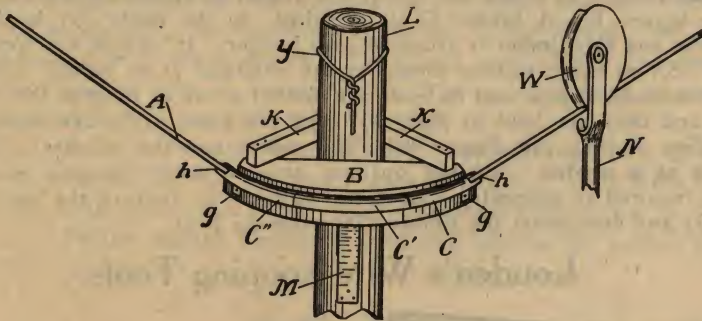


Fig. 798.

Fig. 798 shows the reverse curve when fitted up outside of building in the yard, when a post is necessary to support it. The reverse curve is simple and practical, and with our switches shown in Fig. 748 the utility of the Self-Acting Carrier is greatly increased. Our switches and curves are fully covered by our patents.

"The Litter Carrier and Tracks which I bought of you, arrived in good shape. I have them up and am well pleased with the outfit."

E. B. WAY, Port Matilda, Pa.

"I have been using the Louden Manure and Ensilage Carriers in my barn and am very much pleased. Would not do without them for three times what they cost me."

J. D. DIETSCH, Marion, Ohio.

"The Litter Carrier has arrived. I have it up and it is doing fine."

E. B. HOLCOMB, Ilion, N. Y.



Switch to Connect Two Wire Tracks.

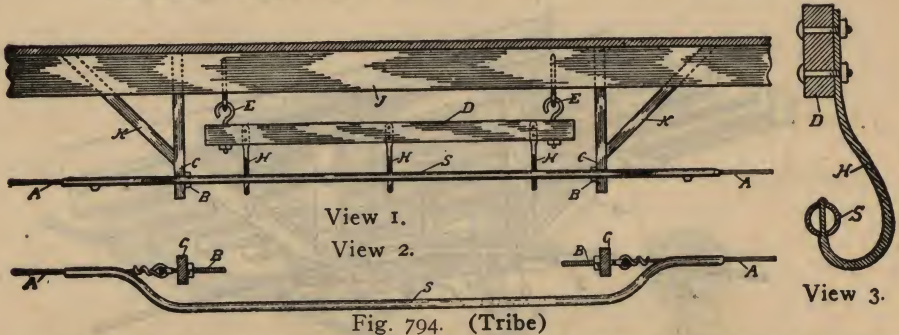


Fig. 794. (Tribe)

Sometimes it is necessary to have an opening in a wire track where it crosses alley or driveway. View 1 in Fig. 794 shows two tracks arranged in this way with a special switch connecting them together. View 2 is a top or plain view and shows how the switch is deflected to one side to pass by the tension bolts BB and supporting timbers CC. J represents the joists of the building or overhead timbers, to which the timbers "CC" may be secured and be held in place by the braces K. A timber D is attached to the joists by hooks EE or otherwise and this timber is provided with hangers "H" which are secured to the switch "S," as more plainly shown in the enlarged cross section view 3. The switch is made of pipe and its ends are slotted so as to fit over the track wires "AA" and they are held in place by keys the same as in our regular switch. (See View E, Fig. 748, Page 80.) The switch and the timber "D" may be as long as is needed for the opening and as many hangers may be used as are required to properly support the switch. To remove the switch remove the keys and disconnect the timber "D" from the joist.

Louden's Wire Looping Tools.



Fig. 759.

(Heroine)



Fig. 760.

Fig. 759 represents our Handy Wire Looping Tongs. All that is necessary is to open them out, as shown in Fig. 760, run the wire in behind the pivot head A the proper distance, and then bring them together, as in Fig 759, and the loop is made. It is easily done and can be still more easily done by fastening one of the members in a vise at B and operating the other by hand.

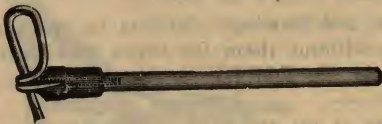


Fig. 761. (Heron)

Fig. 761 shows our Handy Wire Twister for making loops on end of wire, etc. It is simple and easy to operate. Cut shows loop partially formed.



Sundry Wire Attachments.



Fig. 753 (Hurl)



Fig. 755



Fig. 756

Fig. 753 is a detail view of our **Patent Spring End Stop**, the most complete device of the kind ever invented. It is composed of two malleable iron pieces bolted together so as to slide freely on the track, and connected to a special spring as shown. The wheel yokes of the carrier straddle the pointed ends of these pieces and **cannot run off**. The spring eases off the momentum of the carrier and starts it back on its return trip. The spring and the pieces A can be easily removed from or replaced upon the track.

Fig. 755 is a detail view of our improved **Anchor Loop** which goes over the top of the post in Figs. 745 and 751, (Pages 78 and 79). It is made of 0000 wire, the same as the track, and it will stand any strain that can be put upon it. Fig. 756 is our **Patent Anchor Yoke** with malleable casting for anchor bolt, as shown in Figs. 745 and 751. It will stand a tremendous strain.

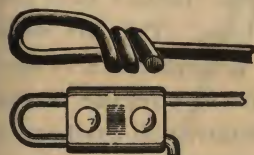


Fig. 757. (Hone)

as easier made and attached and detached. All that is necessary is to remove the bolts which hold the clamps, and it can be hooked into an eye which cannot be done with a twisted loop.

Fig. 757 shows different ways of looping the track and guy wires. The first is the common way of twisting the wire around itself. The second is our **Improved Clamp Loop**. The first is good enough for a moderate strain, or where the wire is double, as in our anchor loops or anchor yokes; but when there is only a single loop the **Clamp is much stronger and better** as well.

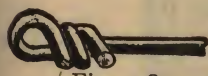


Fig. 758.

Fig. 758 shows how the common twisted loop will sometimes close down under a severe strain. Our clamped Loop is **much stronger** and will hold its own under any strain.



Louden's Feed and Ensilage Carriers.



Fig. 763. (Halve.)

Fig. 763 is one of our Standard Feed and Ensilage Carriers. They are made to raise and lower and to run on our Solid Steel Track the same as our Standard Litter Carrier.

They are designed to run in the feed alley so that the operator can scoop the feed into the stalls on either side. The sloping end makes this easy and speedy work. They can be made sloping at both ends if desired. (See Fig 804 page 85)

They will easily hold 12 bushels of grain or feed. The standard sized box is 28 inches wide, 20 inches deep and 4 feet, 10 inches long. They are made with regular box straps and the bottom is tongued and grooved like a Wagon Box. The corners are bound with iron and the upper edges have regular Wagon Box Straps. They are well finished and are warranted Superior to anything of the kind in market.

"Your Feed and Litter Carrier gives the best of satisfaction. When loaded full of heavy, wet manure, it runs very easy on track, having to turn two square corners before it is switched and run out in yard. The switch works to perfection. Pressing it with one finger, trips the latch and dumps it.

"My barn is equipped with Louden Hay Carriers, Barn Door Hangers and Feed and Litter Carrier, and they all give the best of satisfaction."

H. M. THAYER, Woodhull, Ill.



FEED AND ENSILAGE CARRIERS, (Continued.)



Fig. 804. (Team.)

Fig. 804 is our Feed and Ensilage Carrier, the same as explained in Fig. 763, except that both ends are made sloping so that the feed may be scooped out from either end of the box. We make this box to run on wire track if desired.



Fig. 764. (Hames.)

Fig. 764 is the same as our Standard Carrier (Fig. 763) except that it does not raise and lower. The connections are substantial and it runs easily and will give good satisfaction.



Louden's Feed and Litter Carrier, (Continued)

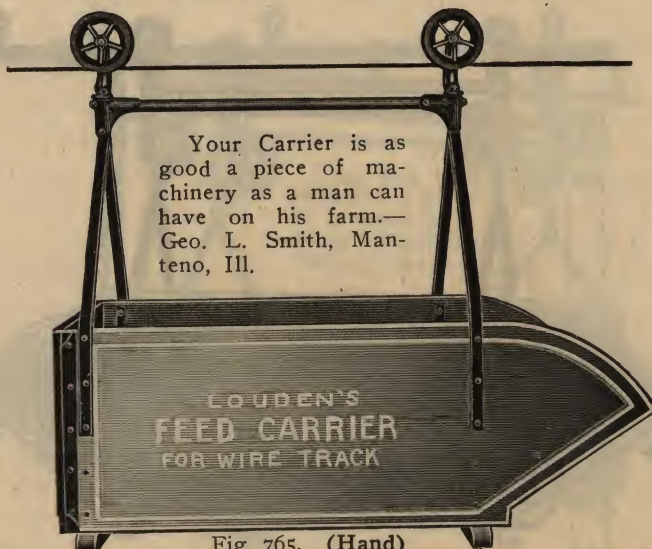


Fig. 765. (Hand)

Fig. 765 is the same as Fig. 764, except that it runs on our **Self-Returning Wire Track**. It will run on curves and switches, and by using our Spring End Stop and a latch at each end it can be made to run back and forth of itself from the Silo to the Stable. Latches furnished to order.

LOUDEN'S PLATFORM MILK CAN CARRIER

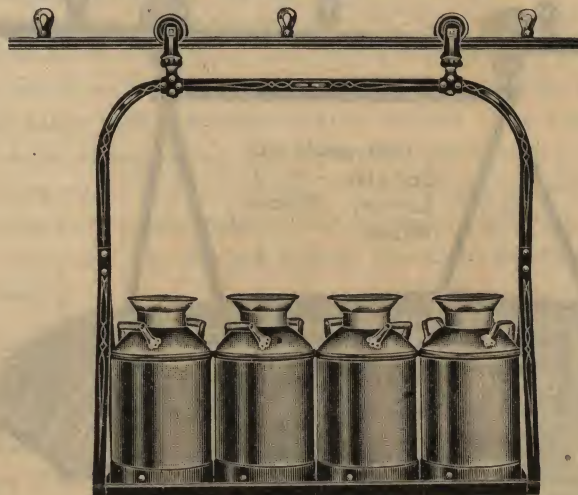
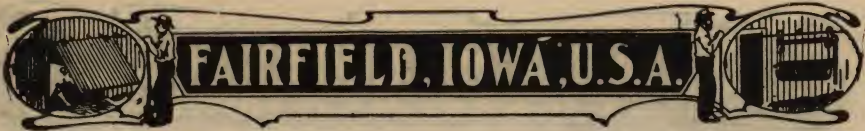


Fig. 802 (Hank)

Fig. 802 is our Platform Milk Can Carrier fitted with swivel trucks to run on our solid steel track. It is a companion carrier for Fig. 766. About the only difference being that they run on different tracks.



Louden's Milk Can Carrier, (Continued)



Fig. 766. (Hark)

Fig. 766 is our Platform Milk Can Carrier, which is designed for carrying 3 large railroad cans, as shown in cuts. Many weary steps and much valuable time will be saved by the use of one of these carriers between the cow barn and the milk house. Having at each end a Spring End Stop and latch (which we will furnish when ordered), the man at the barn can send thirty gallons of milk **safely and quickly** 100 feet or more to the milk house, where the latch will catch and hold the carrier until it is unloaded. The man at the milk house can then **return the empty cans in the same way**, and the latch will hold the carrier at the barn until it is loaded again.

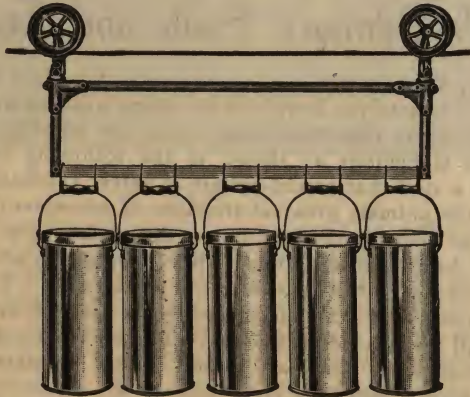


Fig. 767. (Harper)

Fig. 767 is our Suspended Milk Can Carrier for carrying 5 hand or cream cans, as shown. The hooks for attaching the cans to the carrier go with the carrier. These Carriers are fitted with **swivel wheels**, the same as our Self-Acting Litter Carriers to run on curves and switches. The Carriers shown on this page can be furnished with trucks to run on our Solid Steel Track when so desired.



Louden's Platform Hay Carrier.



Fig. 809. (Troy)

Fig. 809 shows **Platform Hay Carrier**, used in same capacity as our **Feed and Ensilage Carrier**, but is designed to carry either loose or baled hay, the teeth being adjustable to hold any kind of a load. It is a great time and labor saver, and will pay for itself in a few months.

Louden's Sanitary Stalls and Stanchions.

Next to pure food and water, there is no part of a dairy barn equipment that tend so largely to promote the health of the dairy animals and insure the purity of the dairy products as comfortable and sanitary stabling. In designing our sanitary stalls and stanchions as shown in the following illustrations, we had in mind to provide a stall that would permit of perfect ventilation, and a stanchion that would allow the animals greatest freedom of movement consistent with restraint necessary to keep them lined up in the stalls. Our stalls make an extremely solid and durable installation. They shut out practically no light, and there are no flat surfaces on which dust can accumulate. The tubular shape of both stalls, stall parts and stanchions makes the task of keeping them entirely free from dirt of all kinds a very easy one. The partitions, stall guards and supports are made from steel pipe two inches outside diameter, held together by malleable fittings which clamp the pipe securely by means of bolts. The fittings are made in tees and crosses. When it is desired to have the supports extended from the floor to the ceiling the cross fittings are used, otherwise use the tee fittings. We make these stalls and stanchions in a number of different styles or designs, permitting a variation in price, and believe that anyone can determine from the cuts shown just what they want, but if not, we will take pleasure in giving all the assistance in our power.

Send for special circulars giving full information.



Louden's Triple Post Tubular Steel Stalls

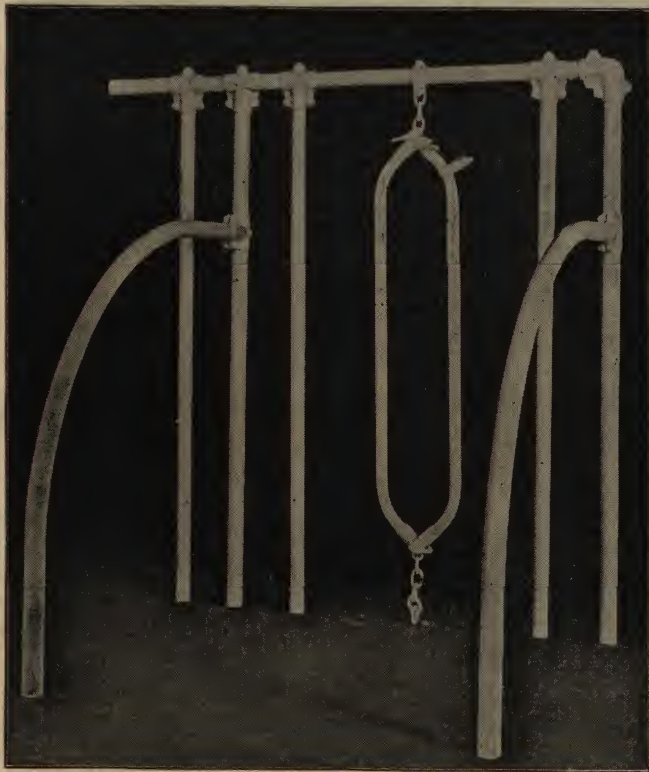


Fig. 810.

This figure represents one regular section, and an end section of our Triple Post Stalls. The regular section consists of one partition, three upright posts, $3\frac{1}{2}$ feet of top rail, 4 T couplings, and one Louden Tubular Stanchion with regular top and bottom fastenings. The end section consists of one partition, two posts, one foot of top rail, two T couplings, and one corner coupling.

The end section is not needed except to begin or end a row of stalls where there is no wall connection. We make this stall of two sizes of tubing, one $1\frac{3}{8}$ -inch O. D. corresponding with $1\frac{1}{2}$ -inch pipe, and the other $1\frac{3}{4}$ -inch O. D. corresponding with $1\frac{1}{4}$ -inch pipe. This is a fine stall and a good seller.

The separation between the stall and the manger is good, but some prefer a little more head room for the cows. It is the most closely divided of any of our stalls, but still there is nothing to keep out the light or prevent ventilation and there is no nook or corner about it which cannot be easily kept clean and sanitary.

Send for Special Circulars.



Louden's Double Post Tubular Steel Stalls.

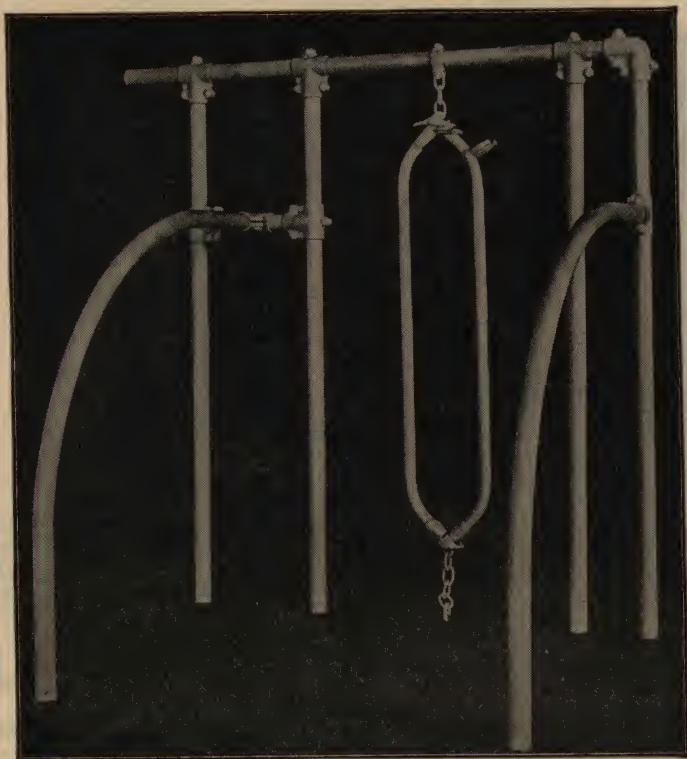


Fig. 812.

Fig. 812 shows one regular section and an end section of our Double Post Stalls. We consider this one of the finest stalls we make. There is good separation and good head room for the cow and the partition being secured to a horizontally disposed cross piece attached to the two posts it is more **securely supported** than if attached to an upright post. It also, has a certain degree of openness and symmetrical proportions which cannot be excelled.

The regular section consists of one partition, two posts, the horizontal cross piece, $3\frac{1}{2}$ feet of top rail, 5 T couplings and one Louden Tubular Stanchion with regular top and bottom fastenings. The end section consists of one partition, two posts, one foot of top rail, two T couplings and one corner coupling. Like the other stalls, the end section is used only at an alleyway or where there is no wall connection.

It is made throughout of $1\frac{7}{8}$ -inch O. D. Tubular Steel. It will be noted that in all our stall illustrations we show the guide to hold the stanchion when open attached to the stanchion itself. However, we will furnish it to go on the adjacent post of the stall if preferred.

Send for Special Circulars.



Louden's Sanitary Stanchions.

The Latest and Best

This Stanchion is made of steel tubing with the best malleable iron couplings. It is simple in construction and the most practical and durable stanchion on the market. There are no pieces to get loose, or sharp corners to injure the cow's neck. They can be opened or closed in the least possible time with one hand and without taking off the glove or mitten, but they cannot be opened by the stock. The locking device is "cow proof."

They last better than wood and are more sanitary. They are fastened to the manger at both top and bottom by heavy, strong chains of sufficient length to allow the stanchion to turn freely

in any direction, and gives a free and natural movement to the head and neck without cramping the stock in any way. The cow is as comfortable in this stanchion as when loose in the pasture, being able to eat her food, or lie down and rest as nature intended she should. The stanchions are $3\frac{1}{2}$ feet by 7 inches inside, but we make them special any size desired.

To fasten the stanchion in the manger the links may be mortised into the timber and bolted as shown in Cut 694. This is the best and most preferable way.

Fig. 727 is a hook bolt which we furnish when desired, at a small additional cost, to attach the chains to the top and bottom piece, instead of mortising, as shown in cut 694.

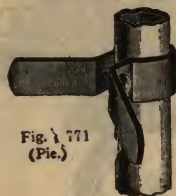


Fig. 771
(Pic.)

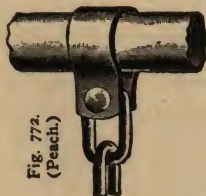


Fig. 772.
(Peach.)



Fig. 727

Fig. 771 is our stanchion guide, and Fig. 772 is our stanchion holder. This guide and holder is used when the manger is made of iron pipe.



Louden's Merchandise Carrier.

Our price list covers the Carrier or Trolley only. As different sized Hoists are wanted for different purposes prices on these can be had from regular list.

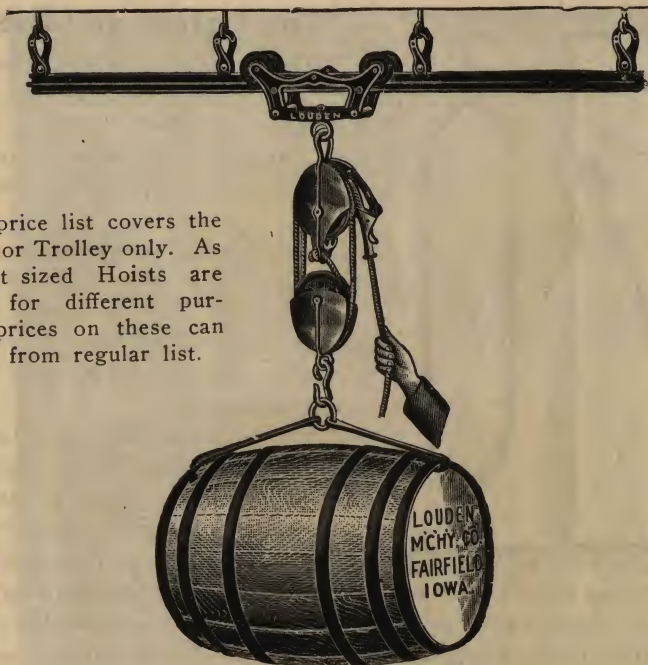


Fig. 537 (Charm).

Suitable for Warehouses, Store Rooms, Feed Barns, etc. It is simply one of our **Perfect Hoists** fitted to a trolley adapted to run on our Single or Double Beaded Steel Track. Either screw eyes or brackets may be used, which makes it easily attached to any ceiling. The Hoist holds the load firmly suspended at any height and there being only one rope, it is easier managed than those having two ropes.

Send dimensions of building with weight of loads to be moved and get estimate of cost.



Fig. 557. (Corn)



Fig. 769. (Fodder).

Fig. 557 is our Two-Wheel and Fig. 769 our Four-Wheel Trolley to run on our Solid Steel Track. They are strong, run easy and may be used as a Merchandise Carrier in connection with a hoist.



Perfect Hoists Without Ropes.



Fig. 532
SINGLE SHEAVE HOIST.



Fig. 533.
DOUBLE SHEAVE HOIST.



Fig. 534.
TRIPLE SHEAVE HOIST.

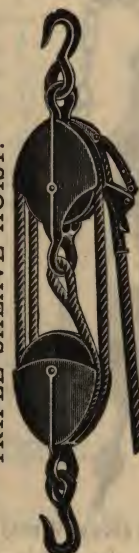


Fig. 449

DOUBLE SHEAVE HOIST REEVED OR
ROPED PROPERLY.

Fig. 449 is our Perfect Hoist. It elevates, lowers, locks and unlocks with one rope only which gives the operator both hands to control the load without having to use one hand on an extra lock rope. It works in any position—perpendicular, horizontal, or at an angle, and therefore can be used where others cannot. It is made in eight sizes, from 400 pounds to 3,000 pounds capacity.

LIST OF SIZES

No.	Sheaves above	Sheaves below	Diam. of Sheaves	Size of Rope	lbs. cap'city	lbs. 1 man can lift	Code
25	3	3	5 inch	$\frac{3}{4}$ to $\frac{7}{8}$	3000	700	Ruth
27	2	2	5 inch	$\frac{3}{4}$ to $\frac{7}{8}$	1800	500	Eliza
29	1	1	5 inch	$\frac{3}{4}$ to $\frac{7}{8}$	1400	400	Jennie
31	3	3	4 inch	$\frac{1}{2}$ to $\frac{3}{4}$	2800	700	Emma
33	2	2	4 inch	$\frac{1}{2}$ to $\frac{3}{4}$	1500	500	Elsie
35	1	1	4 inch	$\frac{1}{2}$ to $\frac{3}{4}$	1200	350	Maude
37	2	2	3 inch	$\frac{1}{2}$	800	400	Mabel
39	1	1	3 inch	$\frac{1}{2}$	400	200	Bessie



Louden's Perfect Wire Stretcher and Hoist.



Fig. 448 (Key West) blocks are made of high grade steel, and the fittings are the best malleable iron. The chains are extra large and strong. The iron rope sheaves are very smooth, to prevent wear on the rope, and turn on special steel thimbles, insuring ease of operation and great strength. It is reeved with rope full three-eighths inch in diameter, is fitted with swivel to prevent twisting, and this swivel being placed on the end of the stretcher next to the wire and away from the post lets the twist out of the wire but does not allow the stretcher itself to turn and wrap the pulling rope around the others or tangle them up, as do stretchers having a swivel next to the post or on both ends.

Louden's Perfect Wire Stretcher is the strongest tackle stretcher made. In stretching the wire the operator stands away from the wire, out of danger, while tightening the tension instead of close up to it as with other stretchers.

The wire grips are fitted with raised flanges or guards which absolutely prevent wires from slipping under the eccentric grips. These grips are fitted with handle one-third longer than other stretchers, and have an off-set curve, giving more convenience and greater power for setting the grip with the hand.

The rope grip is positive and will never slip, but will hold the wire at any tension and the load at any height.

The wire grips are positive and will never fail to hold. It is equally satisfactory for stretching barbed wire or woven wire. The frames of the pulley



Fig. 806. (Mole)

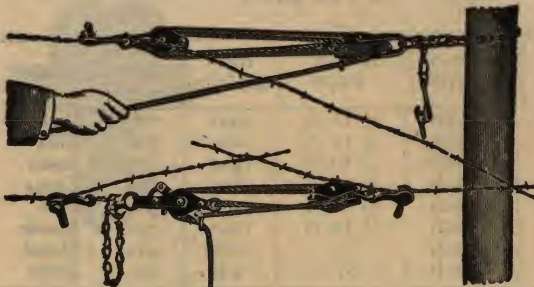


Fig. 807.

Fig. 448 shows Louden's Perfect Wire Stretcher with wire attachments.

Fig. 806 is same fitted with hooks as a hoist of 400-lb. capacity. When used as a hoist the operator is away from the load instead of under it.

Wire Stretchers, (Continued)

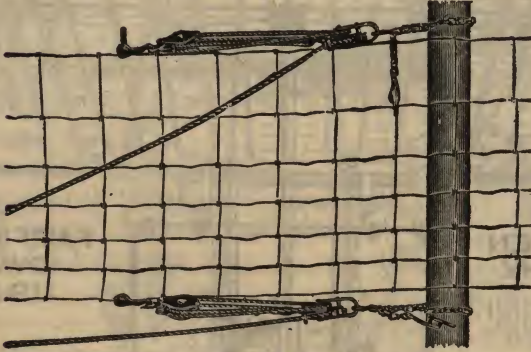


Fig. 808.

Fig. 807 shows Louden's Perfect Wire Stretcher stretching and splicing barbed wire, while Fig. 808 shows same stretching woven wire fence using two stretchers one at the top and the other at the bottom of the fence.

Louden's Self-Opening Ice Tongs.

Patented Feb. 2, 1897.



Fig. 426.

13-inch (Cardenas); 17-inch (Matanza); 21-inch (Sharp)

These are the handiest Tongs made, as only one hand is required to operate them. They are also excellent for moving small boxes, nail kegs, etc. Every merchant and ice-man as well as every housekeeper should have them. Made of the best crucible spring steel, with malleable iron handles. Made in three sizes—13, 17 and 21 inches.



A Center Hoist Barn.

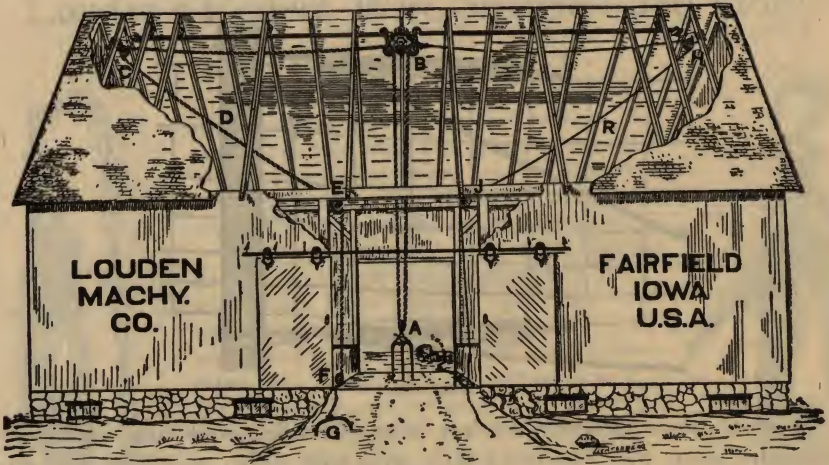


Fig. 607

Fig. 607 shows how our Hay Tools are generally fitted up so as to take the hay from the driveway in the center and deposit it, first in one end of the barn and then in the other. When the rafters are two feet apart the track should be six feet shorter than the barn. This will bring it within three feet of the ends of the barn, which is close enough. To make it good and strong, a hanger and bracket should be placed on each rafter, and for sling and other heavy work it is better to place them on both sides of the rafter where the hay is taken up.



Fig. 617

A collar beam should be spiked to the second pair of rafters from each end, in which hooks are to be screwed for the pulleys C and H, as shown in Fig. 607. This will bring the ends of the track within about a foot of the pulleys as shown in the cut. The collar beams may be 2x6, 3x4 or 4x4—chamfered off thin at the ends so they can be properly spiked to the rafters. When a

piece two inches thick is used, an inch piece should be nailed on the back of the center where the screw of the hook goes through, so as to make it three inches thick at this place. The collar beams should be about four feet long with the ends cut the slant of the rafters, or long enough so the rope will run close to, but not rub on the under side of the track.

Note.—It is a poor plan to screw the hook into one of the rafters, as shown in some hay tool catalogs, because in heavy work it is liable to pull out a single rafter.]

When a reversible carrier is used it requires six (or at least five) knot passing pulleys—one each at C, E, F, H, J and K (See Fig. 607). When only five pulleys are used, the one at F can be removed to K. It is better, however to have an extra pulley. To reverse the carrier set the fork in the load or fasten be-



low, tie the lower ends of reversing rope R and draft rope D together with a good solid knot, pull on the reversing rope until the knot is drawn up against the carrier. The ends connected together at B are now below and the ropes R and D have changed ends. Untie these ends and you are ready for work in the opposite mow. No climbing required. Use knot pulleys and a half-inch or five-eighths rope for reversing. A couple of rope hooks to connect the ends of the rope are an advantage.

When a Swivel Carrier is used, the return rope R is not needed for reversing. All that is necessary is to remove the pulley from C to H, which can be done with our pulley changers without climbing, and to let the draft rope continue to run through the pulleys E and F. In this case only three pulleys are required, but a longer rope will be needed for the right hand end of the barn where it has to cross the drive-way than for the left hand end unless the former end of the barn is shorter. When the driveway is exactly in the center, and is not too wide, the length of rope required for each side can be equalized by locating the pulley E immediately over the center of the driveway. Always latch the carrier to the track at B before reversing.

To get the length of the draft rope, double the distance from A to B when a Double Draft Carrier is used, then add the distances from B to C, C to E and E to F and allow ten to fifteen feet extra for the singletree G. When a Tripple Draft Carrier is used, treble the distance from A to B and add to it the distance from B to the Singletree G, and then add the length of the hay rack for Slings. To get the length of the return rope R measure the distance from B around by H and J to K.

REVERSIBLE STEEL TRACK FORK OUTFITS

The following outfits are suitable for a Center Hoist Barn 60 feet long, as shown in Fig. 607.

1 Louden's Standard Steel Track Carrier	Fig. 306
54 feet Single Bead Steel Track	Fig. 584
30 Standard Two-Part Hangers	Fig. 498
30 Louden's Rafter Brackets	Fig. 424
1 Louden's Triple Harpoon Fork	Fig. 350
4 High Grade 6-inch Knot Pulleys	Fig. 467
2 Single Upright Floor Pulleys	Fig. 364
4 Steel Rafter Pulley Hooks	Fig. 390
1 Louden's Hoisting Singletree	Fig. 344
1 Louden's Lightning Rope Hitch	Fig. 367

Our Four or Six Tined Balance Grapple Fork may be substituted for the Tripple Harpoon Fork above listed, and other substitutions may be made as desired. If a Swivel Carrier is preferred only three pulleys will be required, but two Pulley Changers (Figs 438 and 439, page 47) should be added.



If a Wood Track outfit is wanted substitute a Duplex (Fig. 443) or a Louden Junior Wood Track Carrier (Fig. 441) and put in 108 feet of Angle Track Plating (Fig. 305) in place of the Steel Track. Also substitute Wood Track Hanger Hooks (Fig. 371) for the Steel Track Hangers.

STEEL TRACK SLING OUTFITS FOR END HOIST.

1 Automatic Sling Carrier	Fig. 514
54 ft. Single Beed Steel Track	Fig. 584
32 Standard Two-Part Hangers	Fig. 498
32 Louden's Rafter Brackets	Fig. 424
3 Louden's Standard Slings	Fig. 321
3 High Grade 6-inch Knot Pulleys	Fig. 467
2 Steel Floor Pulley Hooks	Fig. 389
1 Single Upright Floor Pulley	Fig. 364
4 Steel Rafter Pulley Hooks.....	Fig. 390
2 Louden's Standard Pulley Changers	Figs. 438-438
2 Louden's Hoisting Singletrees	Fig. 344
1 Rope Spreader for same	Fig. 345
1 Louden's Lightning Rope Hotch	Fig. 367

We specify three Slings, the number recommended for each wagon. If more wagons are to be used additional Slings should be added. The Louden Junior Sling Carrier (Fig. 491) can be substituted for the Automatic, but in that case the Double Bead Steel Track will have to be substituted for the Single Bead Steel Track.

If a Wood Track outfit is wanted substitute a Louden Junior Wood Track Sling Carrier (Fig. 492) and put in 108 feet of Angle Track Plating (Fig. 305) and 24 Wood Track Hang Hooks (Fig. 371) in place of the Steel Track and Hangers. Or substitute a Reversible Sling Carrier, (Fig. 315), with same changes in Track and Hangers, and in addition drop the Pulley Changers and put in 3 additional Pulleys.

In all cases it is well to have an extra pulley or two. For an extra good job put in Louden's Mammoth Pulleys, (Fig. 519) and use our Chain Attachment (Figs. 362 and 363) to hold them in place.

AN END HOIST BARN.

(See Opposite Page.)

This cut shows a barn arranged to take the hay in at one end. The Hay Door, which is cut high up in the gable, should be large enough to take in the largest forkful or slingload without pulling off the loose hay to make litterings. When there is room it is well to make the door 8 to 10 feet wide and 10 to 12 feet high for a fork, and 10 to 12 feet wide and 12 to 15 feet high for Slings. Of course, doors a little smaller will do in a way, but the verdict of everyone is "the bigger the better."

The track should extend out from two to four feet (or more) according to the size of the barn and the door and whether a fork or slings are to be used. Generally the track should be about the same length as the barn, a pulley collar being used and the back end of the track running within three feet of the back end of the barn, as in Fig. 607. The extension support for the track should be good and strong according to the loads it has to carry and should extend out as far as the track, and back into the barn from two to four rafters, and be securely supported therein.

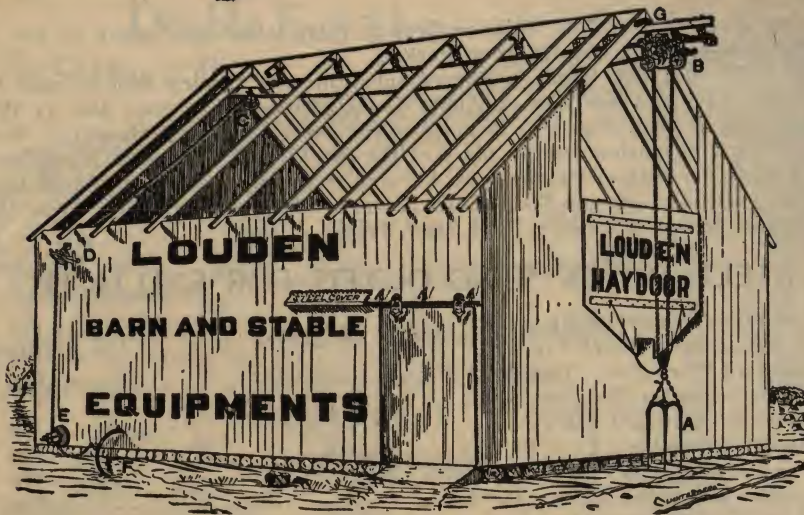


Fig. 608.

By using our Offset Hinges the door will effectually turn water at the bottom. It can be easily opened and closed with the carrier by removing the fork or sling and hitching the pulley to the looped rope secured by eye bolts to the top batten. A large door should have three hinges. This outfit requires three draft pulleys. A Bracket Pulley Holder should be used at D. and our Chain Attachment (Fig. 363) will be good to hold the pulley E in an upright position.

To get the length of draft rope double the distance A to B when a Double Draft Carrier is used, then the distance from B around by C and D to E, adding ten or fifteen feet more to the singletree F. For a Triple Draft Carrier treble the distance from A to B, and add the other distances as before, and the length of the hay rack for slings.

The following outfits are suitable for an End Hoist Barn, 50 feet long, as shown in Fig. 608.

Steel Track Fork Outfits for End Hoist.

1 Louden's Standard Steel Track Carrier	Fig. 306
50 ft. Single Beaded Steel Track	Fig. 584
24 Standard Two-Part Hangers	Fig. 498
24 Louden's Rafter Brackets	Fig. 424
1 Louden's Triple Harpoon Fork	Fig. 350
3 High Grade 6-inch Draft Pulleys	Fig. 468
1 Steel Track Extension Iron	Fig. 380
1 Louden's Bracket Pulley Holder	Fig. 348
1 Steel Floor Pulley Hook	Fig. 380
1 Steel Rafter Pulley Hook	Fig. 390
1 Set Louden's Hay Door Fittings	Fig. 347
1 Louden's Hoisting Singletree	Fig. 344
1 Louden's Lightning Rope Hitch	Fig. 367



Our Four or Six-Tine Balance Grapple Fork (Fig. 351, pages 40 and 41), can be substituted for the Harpoon Forks.

If a Wood Track Outfit is wanted substitute the Duplex Wood Track Carrier (Fig. 443) and 100 feet of Angle Track Plating (Fig. 305) and 24 Wood Track Hang Hooks (Fig. 371) in place of the Steel Track and Hangers. Also a Wood Track Extension Iron in place of the Steel Track Extension Irons.

Any of our Swivel Carriers can be used if preferred. Be careful, however, to note that some of our Steel Track Carriers are used with our Single Bead, and others with our Double Bead Steel Track.

STEEL TRACK SLING OUTFIT FOR END HOIST.

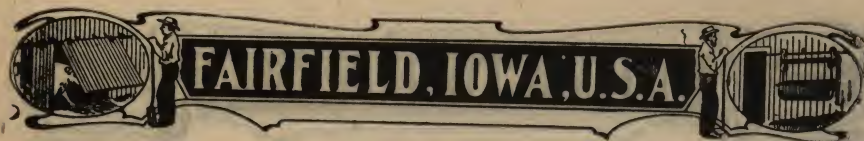
1 Automatic Sling Carrier	Fig. 514
50 ft. Single Bead Steel Track	Fig. 584
28 Standard Two-Part Hangers	Fig. 408
28 Louden's Rafter Brackets	Fig. 424
3 Louden's Standard Slings	Fig. 321
3 High Grade 6-inch Knot Pulleys	Fig. 467
1 Steel Track Extension Irons, Extra Large	Fig. 380
1 Louden's Bracket Pulley Holder	Fig. 348
1 Steel Floor Pulley Hook	Fig. 389
1 Steel Rafter Pulley Hook	Fig. 390
1 Set Louden's Hay Door Fittings	Fig. 347
1 Extra Louden's Offset Hinge	Fig. 349
2 Louden's Hoisting Singletrees	Fig. 344
1 Rope Spreader of same	Fig. 345
1 Louden's Lightning Rope Hitch	Fig. 367

The Louden Junior Sling Carrier, (Fig. 491) may be substituted for the Automatic but in this case our Double Bead Steel Track (Fig. 571) will have to be used in place of the Single Bead Track. We specify 3 slings, the number we recommend for each wagon. If more wagons are to be used additional slings should be added.

If a Wood Track Outfit is wanted substitute a Louden Junior Sling Carrier (Fig. 492) and put in 100 feet of Angle Track Plating (Fig. 305) and 24 Wood Track Hang Hooks in place of the Steel Track and Hangers. Also a set of Wood Track Extension Irons in place of the Steel Track Extension Irons. For an extra good job put in Louden's Mammoth Pulleys (Fig. 519) and use our Chain Attachment (Figs. 362 and 363) to hold them in place; or, if preferred, iron sheave pulleys can be substituted for wood sheave pulleys.

Fig. 600 (next page) represents a long barn arranged to take the hay in at each end. It has hay door and track extensions at each end. The track runs continuously from one end to the other and it should be from four to eight feet longer than the barn to provide for the extensions. The cut shows the Carrier and rope arranged to take the hay in at the right hand end.

When a Swivel Carrier is used all that is necessary to reverse it is to run the carrier along the track from one end to the other and swivel it around. This can be easily and quickly done with the trip cord of the fork or sling. None of the pulleys have to be changed. This outfit requires three draft pulleys and is good for a barn 80 to 100 feet long. It is the easiest and quickest to reverse, requiring no change whatever of the rope or pulleys.



Double End Hoist

No Change of Pulleys

(Patented)

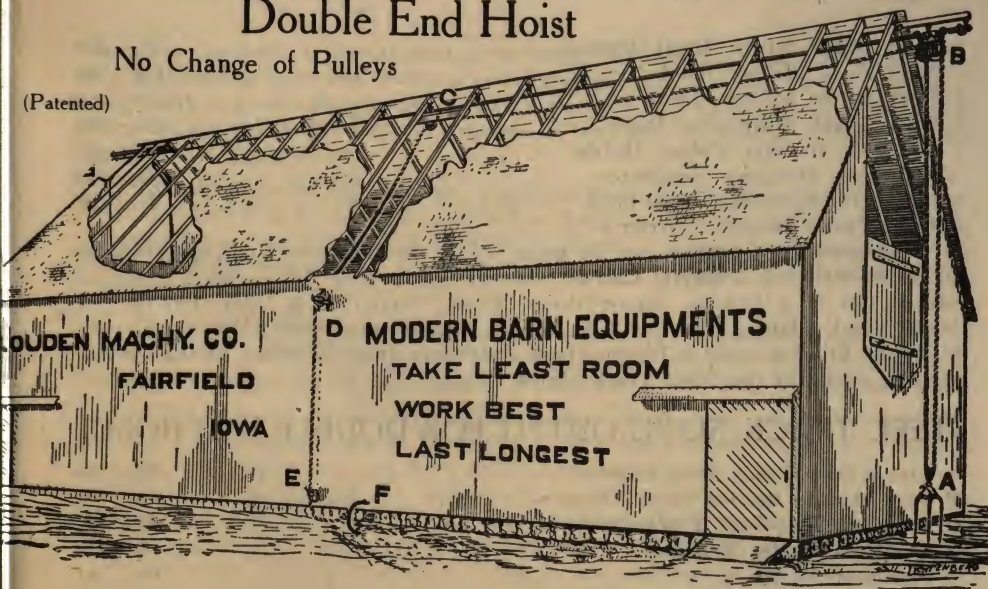


Fig. 609.



Fig. 628.

A Side Collar Beam is spiked to two or more of the rafters at one side of the track near the middle of the barn at C, as more plainly shown by Fig. 628, so that the carrier can run freely by it on the track. A hook for the pulley is screwed into this collar beam and the rope is run down to the side of the barn where it passes over the pulley D hung on our Bracket Pulley Holder and then down to the pulley E and Singletree F. A swivel carrier should be used and a track stop is required at each end.

To get the length of the draft rope double the distance from A to B and then add the distance from B to C, D and E with ten or fifteen feet from the pulley E to the singletree F. For a Trip'le Draft Carrier treble the distance from A to B, adding the other distances to the singletree F and the length of the hay rack for s'ings. For information concerning the track extensions and hay door, see article concerning Fig. 608.

The following outfits are suitable for a Double End Hoist Barn 80 feet long, as shown in Fig. 609.

STEEL TRACK FORK OUTFITS.

1 Louden Junior Steel Track Carrier	Fig. 430
86 ft. Double Beaded Steel Track	Fig. 571
40 Standard Two-Part Steel Track Hangers	Fig. 498
40 Rafter Brackets	Fig. 424
1 Louden's Triple Harpoon Fork	Fig. 350



3	High Grade 6-inch Draft Pulleys	Fig. 468
1	Steel Floor Pulley Hook	Fig. 389
1	Steel Rafter Pulley Hook	Fig. 390
2	Steel Track Extension Irons	Fig. 380
1	Louden's Bracket Pulley Holder.	Fig. 348
1	Louden's Hoisting Singletree	Fig. 344
1	Louden's Lightning rope hitch	Fig. 367
1	Extra Track Stop for Carrier.	

If desired, substitutions can be made as set forth on previous pages, except that with this plan a **Swivel Carrier must be used**. If a Wood Track Outfit is wanted put in a Louden Junior Wood Track Carrier (Fig. 441), 176 feet of Angle Track Plating (Fig. 305), 30 Wood Track Hang Hooks (Fig. 371), only 30 Rafter Brackets, and 2 Wood Track Extension Irons in place of the corresponding parts for the Steel Track Outfit.

STEEL TRACK SLING OUTFIT FOR DOUBLE END HOIST.

1	Junior Steel Track Sling Carrier	Fig. 491
88	Feet Double Beaded Steel Track	Fig. 571
42	Standard Two-Part Track Hangers	Fig. 498
42	Louden's Rafter Brackets	Fig. 424
3	Standard Slings	Fig. 321
3	High Grade 6-inch Draft Pulleys	Fig. 468
1	Steel Floor Pulley Hook	Fig. 389
1	Steel Rafter Pulley Hook	Fig. 390
2	Steel Track Extension Irons	Fig. 380
2	Louden's Hoisting Singletrees	Fig. 344
1	Rope Spreader for same	Fig. 345
1	Louden's Bracket Pulley Holder	Fig. 348
1	Rope Hitch	Fig. 367
1	Extra Track Stop for Carrier.	

If more than one wagon is to be used put in additional slings. If the Automatic Sling Carrier (Fig. 514) is substituted the Single Beaded Steel Track, will have to be used. If a Wood Track outfit is wanted make the substitutions above described.

Cheaper Forks, Pulleys, Track Hangers and Rafter Brackets than those mentioned in the foregoing lists can be furnished, but we do not recommend their use. We have found that in the use of a haying outfit, the best is the cheapest and the cost between the best and the cheaper grade is only a trifle.

PUTTING UP HAY CARRIER TRACKS.

While a barn is being built and while the shingles or sheeting are within a couple of feet of the comb of the roof, is the best time to install a Hay Carrier Track. At this time it is an easy matter to do the work, as the sheeting forms all the scaffold necessary. To install a Hay Carrier Track after a barn is finished means doing the work from below by scaffold or ladder, depending on the height of the barn.

The track may be hung perfectly level or it may be given a slight incline, making it lower at the point where the track stop is attached and the hay is



elevated. The track should always be hung straight and true, and close up to the peak of the barn, but allowing room enough below rafters for the Carrier to run freely. To do this stretch a line from one end of the barn to the other immediately below the peak of the rafters, and nail the Rafter Brackets to the rafters in a straight line.

The track should be taken up in sections and hung to the brackets and then spliced together. The Brackets and Track Hangers which support the track may be placed 4 feet apart for light work, but it is better to have a support from every rafter, and for heavy work a hanger and bracket should be put on **each side** of the rafters where the hay is taken up.

The bolts in the Hangers and Splice Clamps should be drawn up as tight as possible with a wrench, then strike the head of the bolt with a hammer so as to set it, and tighten up the nuts again. When this is done they will not get loose..

If the hay is to be taken in at end of barn, the track should be extended out $2\frac{1}{2}$ to 3 feet when Fork is used and 4 feet when Slings are used. In case the track is installed before the roof is finished, the best plan is to use a good 2x6 or 4x6 long enough to extend out as far as necessary and back in the barn to the third or fourth rafter. Let this extend between the rafters the same as a ridge pole. On this extension support or ridge pole, use our Ridge Pole Brackets, (see Fig. 645, page 51). If the extension is to be put in after the barn is built, use our extension irons and follow directions for same, (see Fig. 380, page 15).

The extension may be covered if desired. Cut a brace to reach from the outer end of the extension to a point on the rafters even with the side of the door and sheet and shingle over to this brace. This not only serves as a roof, but also as a brace for the extension.

ABOUT ROPE

Many persons think that they should use not less than 1-inch rope on a Hay Carrier. This is a mistake. Use the **best grade of manilla rope** and **never** use it heavier than $\frac{7}{8}$ -inch diameter and $\frac{3}{4}$ -inch diameter rope is better. Do not be persuaded to use either a large or cheap grade of rope. Cheap rope is usually hard twisted and kinks badly. In our forty years' experience with Hay Carriers we have learned that the $\frac{3}{4}$ -inch manilla rope is the **best size** to use and in no case should larger diameter than $\frac{7}{8}$ -inch be used. The Pulleys used with Hay Carriers are intended for these sizes of rope and larger will not work so well.

An inch rope should have not less than a 10-inch pulley, and when used on a smaller pulley the bend will be so short that the strands will wear themselves out rubbing on each other, besides it will cost nearly, if not fully, twice as much as three-quarter rope. According to government tests the following are the approximate weights and strength of new Manilla rope:

Half-inch rope, $12\frac{1}{2}$ feet weigh one pound; strength	1,760 lbs.
Five-eighths rope, $7\frac{1}{2}$ feet weigh one pound, strength	3,140 lbs.
Three-quarter rope, 6 feet weigh one pound, strength	3,970 lbs.
Seven-eighths rope, $4\frac{1}{2}$ feet weigh one pound, strength	4,900 lbs.
One-inch rope, $3\frac{1}{2}$ feet weigh one pound, strength	7,050 lbs.

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Jointed or Hinged Hangers . . .	59-61	Stake Holders	63
Track for Double Tread Hangers .	57	Stalls and Stanchions	89-90
Track for Jointed Hangers	61	Singletree (Hoisting)	53
Sliding Door Latch	62	Spreader Attachment for same .	53
Stay Rollers	62	Switches (Steel Track)	74
		Switches (Wire Track)	80
		Trolleys	92
		Universal Power Hoist	25
		Wire Stretchers	94-95



OUR LOCATION.

We are located in Southeastern Iowa about 50 miles from the Mississippi River in the center of the richest agricultural region in the world. It will be seen by the map we are in direct communication with all the great cities of the West. Fairfield has two trunk lines—the C. B. & Q. R. R. and the C., R. I. & P. R. R. We have first class railway communications with all parts of the country and are in shape to contract lowest freight rates and secure prompt shipments. Fairfield is a splendid little city of 8,000 people. It has modern public improvements, is the home of Parsons College, has the finest library in the state, the largest Malleable Iron plant west of the Mississippi River, is a growing manufacturing center and offers rare business inducements to live men.

